ERIC Document Resume	See Instruction Sheet	DATE OF RESUME	DATE RECEIVED

A. PUBLICATION DATA

1. ERIC NUMBER: ED001134

2. ORIGINATOR CONTROL NO(S).: NA

3. IDENTIFICATION NO.: CR 1577

DO NOT WRITE IN SPACE BELOW

MICROFILM COPY AVAILABLE
YES ☒ NO ☐

COPYRIGHT GRANTED
YES ☐ NO ☒

COPYRIGHT RELEASE FILED
YES ☐ NO ☐

TYPE OF REPORT
PROPOSAL ☐
IN-PROGRESS ☐
FINAL ☒
FOLLOW-UP ☐

OTHER ERIC REFERENCES:

ERIC SATELLITE CODE

4. AUTHOR(S): Wenrich, Ralph C. & Crowley, Robert J.

5. TITLE OF DOCUMENT ABSTRACTED: Vocational Education as Perceived by Different Segments of the Population

6. PUBLICATION TITLE: NA

7. EDITOR(S): NA

8. PLACE OF ORIGIN
ORG. Univ. of Michigan
ST. Ann Arbor, Mich.
CITY, STATE
TELE. EXT.
INST/LOC CODE

9. PUBLISHER OR SOURCE Cooperative Research Program, Office of Education, Dept. of Health, Education, & Welfare, Wash., D.C.

10. VOL.	11. PAGES	12. MO./YR.	13. TOTAL PP.
NA	NA	64	159

B. INDEXING DATA

14. SUBJECT AREA

15. TYPE OF ENDEAVOR research

16. INDEXING TERMS (6-12)

		employers	major trends
		household	job opportunities
vocational education	Semantic Differential (SD)		Likert-Type Scale
Image of Vocational Ed. (IVE)			

17. ABSTRACT (MAX. 250 WORDS)

This study was undertaken in Centerville, Michigan, a community with 2,500 students in high schools, evenly divided between boys and girls. The survey discusses the steps in the preparation and evaluation of the Image of Vocational Education and suggests methods of using the IVE. Parents of eleventh grade students, employers located in the school district and school professionals contributed to the study. In today's wold, employers have become more selective, and those responsible for providing a curriculum for the employment-bound student need to know how parts of the population feel about vocational education. Professional educators are aware that less than half of the students at the secondary level will attend college, but these students need an intensive program of studies. However, meaningful educational experiences for the remaining pupils must be given. Forty-five tables and 16 figures accompany the text, together with data collecting forms and statistical tables and formulae---(Likert-type scale and the Semantic differential).

ERIC No.

18. SOURCE OF ABSTRACT

C. FUNDING DATA

19. SUPPORTING ORGANIZATION

20. DIVISION OR DEPT.

21. CONTRACT NO.

PROJECT NO.

22. TOTAL COST OF PROJECT

23. DURATION OR PROJECT

U.S. Department of Health, Education, and Welfare
Office of Education

ED001154

VOCATIONAL EDUCATION AS PERCEIVED BY DIFFERENT SEGMENTS OF THE POPULATION

Cooperative Research Project No. 1577

Ralph C. Wenrich
Robert J. Crowley

REPRINTED BY PERMISSION
U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN PRINTED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

The University of Michigan

ED001134 ERIC

VOCATIONAL EDUCATION AS PERCEIVED BY DIFFERENT SEGMENTS OF THE POPULATION

Cooperative Research Project No. 1577

Ralph C. Wenrich
Robert J. Crowley

The University of Michigan
Ann Arbor, Michigan

1964

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education, and Welfare.

FOREWORD

The demands about to be made of the American high school in the next decade may well be the most exacting in its history as a social institution. Not only must it provide all its students with a sound basic education; at the same time it must meet the stiffened requirements of colleges for some, and yet maintain a meaningful program of studies for those who will face the stringent requirements of the labor market. Just as colleges have become more selective, so have employers: opportunities previously available have diminished. The college-prep student used to be able to weigh the acceptances he received from colleges and choose the most promising one; his counterpart who had to work could move from job to job until he found his place in the world of work. Neither has such latitude of choice in these times.

The attitudes of university officials are fairly clear to high school professionals. Social pressures virtually assure that the latter will keep abreast of developments in university circles. The attitudes of employers are not so obvious; except from the enthusiastic cooperating employers the school receives little news of its graduates who also have left school for work. Therefore, those responsible for providing a curriculum for the employment-bound need to know how segments of the population feel about the present program, and what the characteristics of the group members who have such feelings are. To assist them in this endeavor by developing a reliable, valid measuring instrument is an objective of this survey.

For many individuals in Centreville a personal interview was a novel experience. In spite of the many requests made of them the majority of Centreville respondents patiently supplied the necessary data. They deserve a warm commendation for their courtesy, cooperation, and community spirit. The many other citizens who contributed to the pilot studies should share this praise. Special thanks are due the Director of Vocational Education in Centreville for his support and frank advice; to the school administrators who complied with a variety of requests. Drs. Donald Pelz, Frank Andrews, and Stanley Seashore of the Survey Research Center gave many helpful suggestions and critical comments. Dr. Joseph Dorton deserves the credit for preparing the initial research design. To Dr. H. Clemens Johnson, School of Education, the project extends its heartfelt thanks not only for the development of the computer programs used in the analysis, but also for the interest and encouragement he displayed during its progress.

The advisory committee for the project included as members Drs. Morris Axelrod, Assistant Head of Field Section, Survey Research Center; Ned Flanders, Professor of Education and Research Consultant; Norman C. Harris, Associate Professor of Technical Education; Allen Menlo, Associate Professor of Educa-

tion; John Milholland, Professor of Psychology and Chief, Evaluation and Examinations Division; Milton Brown, Research Assistant; and Joseph Dorton.

For their help and encouragement in preparing and processing the initial proposal and arranging the needed extension, credit is due to Robert Fitzpatrick, Project Representative, University of Michigan Office of Research Administration; and Alice Scates, Research Coordinator, Cooperative Research Branch, U.S. Office of Education.

The research team of Robert Crowley, Leroy Doggett, Jacqueline MacEachern, and Leslie Goodman deserve warm thanks for their unstinting dedication to the study. Mr. Crowley, the Research Associate, formulated the plans for collecting the data, devised the evaluative instruments, and subsequently prepared the report for publication. The burdensome task of preparing the innumerable drafts and forms devolved upon Mesdames Brenda Ballard and Donna Fink. Miss Barbara Hall, assistant to the Project Director, faithfully coordinated the many arrangements with other departments of the University.

The project has made use of the services of the 7090 computer available at the Computer Center at The University of Michigan.

Ralph Wenrich

Ann Arbor
August, 1964

TABLE OF CONTENTS

Page

LIST OF TABLES vii

LIST OF FIGURES xi

PART I. THE DEVELOPMENT OF THE IMAGE OF VOCATIONAL EDUCATION (IVE) SCALE 1

- A. Introduction 3
  - 1. The Problem 3
  - 2. Definitions 5
  - 3. Assumptions 5
- B. Review of the Literature 7
  - 1. The Concept Attitude 7
  - 2. Attitude Scales 8
  - 3. The Semantic Differential as an Attitude Scale 11
- C. Design of the Study 12
  - 1. Introduction 12
  - 2. Development of the Image of Vocational Education Scale 12
  - 3. Characteristics of the Sample 16
  - 4. Sampling Characteristics 18
- D. Evaluation of the IVE 22
  - 1. The Likert-Type Scale 22
  - 2. The Semantic Differential 28
  - 3. Summary and Implications 36

PART II. THE USE OF THE IMAGE OF VOCATIONAL EDUCATION SCALE 43

- A. Prevailing Attitudes 45
  - 1. Items that Discriminated Between Groups 45
  - 2. Semantic Differential Profiles 52
- B. The Context of Centreville's Attitudes Toward Vocational Education 66
  - 1. Introduction
  - 2. Favorability and Selected Demographic Characteristics of Respondents in Centreville 68
  - 3. Measures of Satisfaction and Awareness 79
  - 4. The Student and His Future Plans 92
- C. Recommendations 100

TABLE OF CONTENTS (Concluded)

Page

APPENDIX A. SELECTED REFERENCES 101

APPENDIX B. DATA-COLLECTING INSTRUMENTS 105

APPENDIX C. MATERIALS RELATED TO THE IVE SCALE 135

APPENDIX D. STATISTICAL TABLES AND FORMULAS USED 143

LIST OF TABLES

Table Page

I. Sample Characteristics 17

II. Characteristics of the Sample 20

III. Likert Scale: Distribution of Item Responses 23

IV. Likert Scale: Factor Analysis (Unrotated) of the Individual Items 23

V. Likert Scale: Summary of T-Ratios for Individual Items 24

VI. Likert Scale: Relevance of IVE Summated Rating Items to Vocational Education as Rated by a Selected Group of Professionals in Vocational Education 27

VII. Unrotated Factor Loadings of Subscales Obtained on Concept 31

VIII. Stability of Unrotated Factor Loadings of Factor I Over Administrations of the Semantic Differential Scale 32

IX. A Summary of Differences Between Means for All Groups 46

X. A Summary of Items that Discriminated Between Employers and Households 47

XI. An Item that Discriminated Between School Professionals: Administrators from Teachers 48

XII. A Summary of Items that Discriminated Between Employers and School Professionals 49

XIII. A Summary of Items that Discriminated Between Households and School Professionals 51

XIV. Rate of Returns Spring Survey 67

XV. Relationship Between Degree of Favorability and Sex of Respondent 69

XVI. Relationship Between Degree of Favorability and Age of Respondent 70

LIST OF TABLES (Continued)

Table Page

XVII. Relationship Between Degree of Favorability and Personal Experience with Vocational Education (Households and Employers) 71

XVIII. Relationship Between Degree of Favorability, Age of Respondent, and Personal Experience with Vocational Education (All Groups Combined) 71

XIX. Relationship Between Degree of Favorability and Income of Respondents (Households and School Professionals) 72

XX. Relationship Between Degree of Favorability, Age, and Income of Respondents (Households Only) 73

XXI. Relationship Between Degree of Favorability and Occupational Status of Respondent (Households) 74

XXII. Relationship Between Degree of Favorability, Occupational Status of Respondents, and Personal Experience with Vocational Education (Households) 75

XXIII. Relationship Between Degree of Favorability and Educational Levels of Respondents 76

XXIV. Relationship Between Degree of Favorability, and Acquaintance with a Student in a Vocational Education Program 77

XXV. Relationship Between Degree of Favorability, Acquaintance with a Student in a Vocational Education Program, and Educational Level of the Respondent 78

XXVI. Relationship Between Degree of Favorability and Extent of Interaction 79

XXVII. Relationship Between Degree of Favorability, Acquaintance with a Student in Vocational Education, and Extent of Interaction (Households) 80

XXVIII. Relationship Between Degree of Favorability, Extent of Interaction, and Income (Households) 81

XXIX. Relationship Between Degree of Favorability and Years of Residence in Centreville 83

LIST OF TABLES (Continued)

Table Page

XXX. Relationship Between Degree of Favorability and Belief in the Existence of an Unemployment Problem Among Centreville's Recent High School Graduates 84

XXXI. Relationship Between Degree of Favorability and Estimate of Number of Youth Seeking Employment Ten Years Hence 85

XXXII. Relationship Between Degree of Favorability and Prediction of Changes in Kinds of Job Opportunities 86

XXXIII. Relationship Between Degree of Favorability and Estimated Kinds of Changes in Job Opportunities 87

XXXIV. Relationship Between Degree of Favorability and Estimates of Number of Students Enrolled in the College Preparatory Program (Households and School Professionals) 88

XXXV. Relationship Between Degree of Favorability and Appropriateness of Percentage 88

XXXVI. Relationship Between Degree of Favorability, Estimate of Percentage in Program, and Appropriatness of Percentage (Households) 89

XXXVII. Relationship Between Degree of Favorability and Belief in Comparability of College Preparatory and Vocational Education Programs (Households) 90

XXXVIII. Relationship Between Degree of Favorability, Comparability of Programs, and Appropriateness of Percentage in College Preparatory Program 90

XXXIX. Relationship Between Degree of Favorability and Satisfaction with Use of Present Funds 91

XL. Relationship Between Degree of Favorability, Estimates of Comparability of Programs and Satisfaction with Use of Present Funds (Households, School Teachers) 92

XLI. A Summary of Variables Related to Career Plans 94

XLII. Relationship of Definiteness of Plans and Variables Related to Career Plans 96

LIST OF TABLES (Concluded)

Table	Page

XLIII. Relationship Between Existence of Career Plans, and Intent to Continue School 97

XLIV. Relationship Between Definiteness of Student's Plans, Intent to Continue School, and Income of Respondent 98

XLV. Relationship Between Existence of Career Plans, Intent to Continue School, and Income of Student's Family 99

LIST OF FIGURES

Figure Page

1. Likert Scale: Correlation between odd-half and even-half scores. 25

2. Power curves for Likert Scale. 29

3. Semantic Differential Scale: Correlation between odd-half and even-half scores (concept: college preparatory education in high school). 33

4. Semantic Differential Scale: Correlation between odd-half and even-half scores (concept: vocational education in high school). 34

5. Semantic Differential Scale: Correlation between scores obtained on the concept: college-preparatory education in high schools, and on the concept: vocational education in high school. 35

6. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (households, employers, and school teachers). 37

7. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (employers only). 38

8. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (households only). 39

9. Image of Vocational Education Scale: Correlation between Likert Scale adjusted scores and adjusted scores obtained on concept: vocational education in high school (sample at households). 41

10. A Comparison Profile: College-preparatory education in high school at perceived by all groups. 55

11. A Comparison Profile: Vocational education in high school as perceived by all groups. 56

LIST OF FIGURES (Concluded)

Figure | Page

12. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by school administrators (N = 19). 57

13. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by school teachers (N = 25). 58

14. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by households (N = 155). 59

15. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by employers (N = 71). 60

16. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by judges (N = 7). 65

PART I

THE DEVELOPMENT OF THE IMAGE OF VOCATIONAL EDUCATION (IVE) SCALE

BLANK PAGE

A. INTRODUCTION

1. THE PROBLEM

Almost axiomatic in the formulation of a new plan of action is the inclusion of a means to describe the present situation. Yet administrators of vocational education programs are in the position of being required to plan, or to make recommendations about, new vocational programs in high school on the basis of incomplete information. They may know what the best high-school program for the community should be, but they have at best few objective means to determine how its citizens react to the present program. One of the intangibles which influences such factors as the number of students who wish to enroll in the program, the cost of facilities and equipment, employment opportunities in various fields, the availability of instructors and so forth is the image vocational education presents to different segments of the population. For them this image is the way they perceive vocational education, its activities and rationale.

If the vocational educator has more exact information about the perception of his program, then he should be able to administer it that much more effectively. With such knowledge he has at least two courses of action open to him. One is to accept the image and to bring his high-school program more in alignment with it than at present; the other is to try to modify the image by techniques available in the literature. The former course assumes that there is a discrepancy between the image and the program that places the program in an unfavorable light; the latter makes the assumption that its program is satisfactory and the image is unfavorable because of misconceptions. This study makes no attempt to establish the effectiveness of a vocational program; it has set out to describe, by means of a measuring instrument, perceptions of individuals in contact with a program. The criteria for effective vocational programs must derive from the sound judgment of experts in that field. The IVE can delineate with considerable accuracy the perceptions of the program; what should be done about the perceptions is a question beyond its scope and function.

The survey began with an important assumption: that specified groups of adults held distinctive attitudes towards vocational education. The reasoning which prompted such an assumption was that each group should have some connection, how tenuous it was at that time was not known, with regard to the program; these were parents (the proper high-school education for their children), employers (their employment needs and requirements), and school professionals (the provision of the best high-school education possible for their students).

The most important task appeared to be one of developing a valid, reliable instrument. The existence of such a data-collecting device would enable administrators to survey their local school districts to determine how favorable relevant groups in the community were towards the local program in vocational education, at reasonable expense and with some confidence in the results.

The use of the IVE as conceived would involve isolating some relevant characteristics of groups in the community to be surveyed: the demographic variables, age and income, are examples of one kind; the particular context of the community might suggest others. The questionnaire as mailed would contain questions designed to elicit data about these characteristics, as well as a version of the IVE. The returns would permit an ordering into groups on the basis of scores on the Likert-type scale, and thereby an analysis of the characteristics. A further step would involve the construction of profiles for each group from the SD data. A variety of profiles would become possible in this manner.

The site chosen as the laboratory for the study was a city hereafter called Centreville, a city that forms an integral part of the industrial complex in Michigan. It is one which depends for its progress upon the quality of its business and especially its industrial production. One of its problems could well be similar to those facing cities in similar industrial complexes: the development of a skilled work-force. The success a community such as Centreville enjoys in resolving a problem such as this could undoubtedly contribute to its growth.

The school administration in Centreville proved receptive to the suggested proposal to develop such an instrument and indirectly to survey attitudes towards its own programs, and offered to provide any required assistance. This offer of assistance, in addition to the proximity of that city to Ann Arbor, as well as the existence of a functioning vocational education program, made its selection as a base of operation very helpful to the research staff. At the same time the process of validation of the instrument could benefit the host city by providing the school authorities with the results obtained using the IVE.

The instrument as envisioned had to be general yet pertinent; concise, but not erudite; simple and clear in its directions; inexpensive to prepare and light enough to mail first-class; of sufficient length to interest but not tire; operationally it had to have a respectable reliability and validity. These criteria served as guidelines in the instrument that was finally administered. This version and the most recent experimental revision appear in Appendix B.

Part I of the study discusses the steps in the preparation and evaluation of the IVE; Part II suggests methods of using it.

2. Definitions

Attitude—An attitude is a tendency or predisposition to evaluate an object or the symbol of that object in a certain way. Evaluation includes cognitive as well as affective elements.

Attitude Scale—A data collecting instrument designed to measure an individual's attitude in degrees of favorableness and unfavorableness.

Semantic Differential Scale—A data-collecting instrument designed in this study to locate a semantic space the evaluative dimension of the meaning of a concept.

For the Purposes of This Study:

Household—A household means a parent or legal guardian, age 18 or more, of any student currently enrolled in the eleventh-grade of Centreville's high schools.

School Professional— (a) a teacher means any member of the Centreville high-school faculty whose primary responsibility is teaching; (b) a school administrator means any member of the high-school faculty whose primary responsibility is supportive: guidance counselors, principals, psychologists.

Employer—An employer means any personnel director or policy-making official of an enterprise that pays taxes on the wages of employees.

Vocational Education in High School—Vocational education in high school means public school instruction that develops the basic skill, judgment, and job-related knowledge, sufficient to prepare youth for full-time employment in business, agriculture, trade, industry, and other occupational areas.

A College-Preparatory Program in High School—This phrase refers to that sequence of courses which prepares a student either to enter a college of his choice, or to meet the general requirements of most colleges or universities.

3. Assumptions

1. An individual can formulate a precise self-concept in regard to his position vis-a-vis vocational education in high school.

2. The responses to items and subscales reflect an honest over-all attitude of favorableness-unfavorableness toward vocational education in high school.

3. The scores of employers reflect the attitudes implicit in the enterprise's employment policies in regard to the hiring of youth ages 18-24.

4. The conclusions reached in the analysis are applicable to the sample and limited to the period in which the study occurred.

B. REVIEW OF THE LITERATURE

1. The Concept Attitude

The gradual development of a concept such as that of attitude has proved to be a fortunate trend. The need for such a concept has been so widespread that its vagueness has not apparently restricted its use and has helped facilitate growth among the behavioral sciences (Allport, 1954). Antagonistic theories of behavior have made use of it to explain phenomena their systems could not account for satisfactorily. At the same time, however, its utility may have obscured the lack of precision with which it is used. The following discussion is an attempt to correlate an acceptable definition of attitude with the instruments used to measure it.

The variety of definitions resolve themselves into two general classifications: that which refers to probability, and that which refers to latent-process conceptualizations. The former relies on the consistency of certain behaviors among subjects, whereas the other seeks manifestations of some underlying variable which defines the behavior. The task which faces a probability approach is a straightforward one of the determination of the consistent probability of certain response behaviors given certain stimuli. Latent process conceptions either impute the empirical existence of a hidden mechanism or "postulate a hypothetical mediating variable which is not regarded as having empirical referents, counterparts, or existence which serves as a convenient tool for analysis" (De Fleur and Westie, 1963). All positions agree in their emphasis on consistency of response; they disagree on the need for the unobservable event as a necessary explanation.

Whatever attitudes may be, they are certainly complex. Some investigators have concentrated upon the structure of the attitude, while others more recently have sought to study what the attitude does for, or tells about, the personality of the individual, or how the attitudes function. An examination of the theoretical implications of this latter approach may be pertinent here.

The manner whereby the individual reacts to the items suggests two viewpoints: (1) he reacts both affectively and intensely in terms of feelings of approval (goodness) or disapproval (badness); (2) he reacts cognitively on the basis of the informational content which structures his beliefs about, and knowledge of, the object or symbol evoked by the items. Attitudes derive their uniqueness not so much from their cognitive component, but from their affectivity. It is this last quality which distinguishes attitudes from judgments.

This disposition to evaluate the items along some dimension of goodness or badness is measurable. Katz and Statland (1959) write that "evaluations are termed high when the attributed qualities are desirable, and low when they are undesirable," (pp. 428-429). The cognitive component may include beliefs in and about the object, its characteristics, and the relationships between the attitude object and "objects" which have affective significance for the individual. It, too, is potentially measurable along a dimension of acquantance with the object, from a minimal to an extensive acquaintance. The importance of the role of cognitive content is less than than of affectivity, however; it may merely specify the object as an aid to its recognition and then relate it to the evaluative standard. When the situation does require a fuller cognition of the object, the number of cognitive elements and their degree of integration becomes more pronounced and therefore more important.

Attitudes belong to larger structures called values, which form systems. Attitudes within the individual's value system may combine into a unique hierarchical order. This possibly explains how it comes about that two individuals, each with similar total scores on an affectivity dimension, might differ on specifics about the object evaluated. The determination of the direction of an attitude may not be sufficient; one may also need to know its intensity. The items about which a person or group feels most are those which "form the keystones of opinion on the topic," (Smith, 1954). Moderate attitudinal affects indicate that the attitude object is less important than others to the person's value system; and, in addition, the object is not definite enough to inspire confidence in the respondent as to the relationship between it and his values. The separation of the attitude from other attitudes and values Katz (1959) refers to as a failure to attain linkage. Many attitudes are not of sufficient importance or relevance to a value system to link with it.

The interplay of the dimensional relationships between affect and cognition affords possibilities for insight into the individual's attitudes. What is true of the molecular level of the individual might well be true on the molar level of the group as well. The behaviors related to an attitude constitute an attitude universe. Those individuals with attitudinal behaviors in common would form a group. This group in turn might differ from another group similar in size in regard to an attitude object by measurable amounts.

2. Attitude Scales

In the construction of attitude scales the items and the method whereby selection is accomplished give the scale its unique character. Selection of an item involves consideration of its form and content. The latter specifies the items type: e.g., an opinion statement with five categories of agreement.

Form refers to the operating characteristic of an item: whether responses to it increase (decrease) in a uniform manner (a characteristic known as monotonic); or whether they reach one or more maxima (non-monotonic).

There exists a variety of techniques for selecting items and for organizing them into scales that suit the objectives and resources of the investigator. These include judgment methods, the method of summated ratings, scalogram analysis, latent-structure analysis, and relating methods. The method last cited appeared to have no relevance to the study and is not treated in the discussion that follows.

(a) JUDGMENT METHODS

There are two salient characteristics that serve to distinguish judgment scales from others; the investigator must arrange to have the items scaled by judges, and the respondents derive their scores from a measure, such as the median, based on the scaled value of the items.

Frequently the number of items assembled to constitute the scale determine the type of judgment technique to use. For a scale of only a few items the use of paired comparisons is quite appropriate, while for larger quantities of items there are short-cut methods. Among these the method of rank order is seldom used; more widely favored is the method of equal-appearing intervals and its counterpart, that of successive intervals. The expectation is that when the judges sort the items on the dimension, they will differ to some degree. The overlap that results facilitates the subsequent scaling of items. A mathematical model utilizes the overlap to generate probability statements.

Criticism of the judgment methods focuses upon the variance attributed to items in the middle range. The more extensive variance these items possess may result from their ambiguity. The second element subject to criticism is the bias that the judges themselves exert over the ratings. Edwards (1957) discusses the research on this matter.

Scales often bear either descriptive names or the names of the principal innovators in their use. The most authoritative contributor to judgment methods was L. Thurstone, the author of several treatises on these methods. R. Likert called attention to the application of the methods then in use in intelligence testing to the measurement of attitudes. The impetus his work gave the method of summated ratings is reflected in their general association with his name. More recently L. Guttman has championed a measurement technique known as scalogram analysis. The most recent innovation, the applicability of P. Lazarfeld's proposed latent analysis technique, is a subject of contention and current debate in the literature (Fleur and Westie, 1963).

(b) SCALOGRAM ANALYSIS

A premise basic to the use of this method is that there exist scaleable universes and that the behavioral items that constitute such a universe are also scaleable. When the items do not scale they do not belong to a scaleable universe. Items have an inherent, cumulative property that specifies the rank or position they will have assigned them in a scale. The respondent should progress through the scale only until he reaches the limit corresponding to the intensity of his attitude. Guttman has formulated a general method for developing such scales. Items included in the scale usually number ten to twenty, but scales of fewer items are by no means rare. The respondent's score depends upon the number of items he has successfully passed. The main difficulty that use of the method entails is the rarity of perfect scales; the scales now in use have to utilize techniques to account for the errors, or marginals. Edwards presents an interesting account of how to manage such errors (1957, pp. 184-188). The scales entail considerable investigator effort, but by way of compensation they permit fairly accurate estimates of the direction and intensity of the individual's attitude.

(c) THE LAZARSFEILD LATENT ANALYSIS

This reformulation of attitude measurement stresses the relationship between the latent variable and the intercorrelations between the items. The usual position has been that the interrelationships among items define the attitude; in this method the reasoning is that the intercorrelations occur because of the latent variable. The latent-structure analysis has something common with the Likert-type scaling method. Latent-class analysis assumes that the interrelationships among the items define the subpopulations which constitute the entire population of respondents. For each total subpopulation there is a relationship between the items that is unique to them.

(d) LIKERT-TYPE SUMMATED RATING SCALES

The items that form a scale of this nature belong to a hypothetical universe of such items; every item is potentially eligible for inclusion in the scale. Whether or not they are included depends on the respondents themselves. The task of the latter is to indicate the extent of their agreement or disagreement with each item. The categories afforded range from strong agreement to strong disagreement, with the middle interval as the indicator of weakest intensity. Each category has a numerical value assigned to it ranging from 1 to 5. Before assigning weights to a category the investigator must determine whether the item is favorable or unfavorable to the object to be evaluated. He then selects an equal number of both types of items, usually between forty to fifty. The individual's total score reflects the summation over all the items on the scale. Some measure of central tendency of the scores of all the group serves as the reference point for the individual's score.

The results of an administration of the tentative scale to a population roughly similar to the intended population should result in scores forming a frequency distribution of individuals ranging from the highest to the lowest. The investigator takes a percentage of the highest and lowest scores. There should be at least 25 cases in each subgroup out of a sample size of 100, and proportionately as size increases. It is then possible to compare for significance the difference of means scores for each item obtained from the two subgroups. The analysis item by item leaves a residue of items that are to form the basic scale. Twenty-five to thirty of the items constitute the scale to be administered. The score distribution will depend on the operating characteristics of the particular items in the questionnaire.

3. The Semantic Differential as an Attitude Scale

The usual conception of the measurement technique called the Semantic Differential embraces a variable number of factors that locate the meaning of a word in semantic space. In most instances the factors bear such titles as potency, activity, or evaluation, or variations on these. There seems to be little doubt that the evaluative factor is a very important dimension of the meaning of a word (Osgood, p. 187). In Chapter V of his book on the measurement of psychological meaning Osgood has proposed that a further use of the SD as a measuring instrument is possible. He suggests that words which are operationally evaluative in nature can serve as a basis for the assessment of attitudes. Attitudes, he suggests, represent a dimension of meaning, one which is highly evaluative. Words that form scales of an evaluative nature therefore can serve to measure attitudes. Some construct corresponding to a latent variable, a representational response, mediates stimuli and their responses. "Words represent things because they produce in human organisms some replica of the actual behavior towards these things as a mediation process," (p. 7). A word such as good should elicit the attitudinal response, as similarly should terms such as wonderful, safe, and beautiful. The task would appear to be one of defining the universe of evaluative words that may be used to elicit an attitude toward an object or symbol, and then of selecting from it those which most consistently perform their intended function. Osgood has provided an enumeration of words and their loadings which have resulted from his experimentation. The list is by no means intended to be exhaustive; examples from his list may serve as check points in any derived list.

C. DESIGN OF THE STUDY

1. Introduction

The scarcity in the available literature of information about the attitudes towards vocational education possessed by populations of the type appearing in this study suggested some form of direct confrontation of the groups. The personal interview survey seemed ideal for this. It has the additional advantage, as Thurstone had suggested (Green, 1954), in its use of open-ended questions, as a possible source of attitude items. The respondents did provide the study with an interesting variety of answers to questions which previous research and the investigator's judgment has proposed as relevant. In addition they provided a pool of terms to use in the construction of a semantic differential scale. A series of preliminary drafts of the final instrument mailed to other subsamples of the same population followed. The respondents from the personal-interview survey received a copy of the IVE that had undergone several revisions. Much of the information gathered previously facilitated an analysis of the returns on the basis of demographic and other selected variables. The Likert-type summated-rating scale served as the dependent variable in the analysis. The section of the scale devoted to the semantic differential scale permitted the development of attitudinal profiles. Appendix B contains examples of the data-collecting instruments.

2. Development of the Image of Vocational Education Scale

The attainment of the objectives of the study required the development of several instruments for collecting data. The list of such instruments includes a personal interview schedule,* and the IVE which consists of two sections: (1) a Likert-type summated-rating scale; and (2) a semantic differential scale (measurement operation).

---

*There are several texts on the construction of personal interview scales, e.g., Festinger and Katz (1953).

(a) THE IVE SCALE

(1) The Likert Summated-Rating Scale

The selection of the Likert-type scale depended on its known operating characteristics:

a. The results of Likert scales are group scores. It permits the ordering of groups in terms of their total evaluative responses to to the items in the scale;

b. The items need only contribute to the overall general attitude: they need not have values predetermined by judges and subsequently standardized;

c. The entire scale need not contain more than 25-30 undimensional and homogeneous items to attain satisfactory reliability.

(2) The Semantic-Differential Scale (SD)

Attitude scales of the Likert-type occupy a firm position as a research tool of the scientist. Most current research focuses on their refinement and modification. The semantic differential measurement operation is a relatively untested instrument when used as an instrument to evaluate attitudes. Osgood (1957) has cited the use of Guttman and Thurstone scales in conjunction with specifically evaluative scales to measure attitudes. The successful administration of such an operation to random populations varying in a host of relevant variables such as educational level and amount of information in regard to the concept measured is novel, as may well be its pairing with a summated-rating scale.

The virtues of the SD include its exhaustiveness: a properly constructed scale will pinpoint the evaluative aspect of a concept with precision and incisiveness; it affords the respondent slight leeway. It is easy enough to respond to when the directions prefacing it are clear. Few respondents experience difficulty with the instructions. The factor analysis provides sufficient data for construction of profiles.

The use of the SD in mail surveys presents several difficulties in addition to those normally encountered:

a. its standard format presents a little difficulty to some respondents and the novelty of the approach disconcerts others;

b. the number of scales is somewhat crucial. This version used twenty scales twice, or forty responses. There is considerable reluctance on the part of many to answering a summated-rating scale coupled with a different kind of instrument of considerable length. There are two different kinds of instructions involved in the scale and each demands of the respondent a new response set. During the spring survey some respondents received booklets with the SD followed by the Likert; and others in the reverse order. Similarly others received both subscales, separately. The results proved inconclusive. It may be better to expect the respondent to return the entire scale rather than to depend on the persuasive power of a cover letter to induce two separate replies.

c. in some instances respondents react with extreme favorableness to each and nearly every scale. This is sometimes labelled the "American Legion" effect.

d. there is some question as to the extent of knowledge a scale may require.

(b) THE DEVELOPMENT OF THE LIKERT SCALE

1. The interview schedule underwent considerable pretesting in the area around Ann Arbor before its use in the fall survey. There were three versions of the schedule, each designed for a specific group, each of which had several questions in common with the others. There were no changes in the questions during the field work, as the interviewers, in their handbook of instructions, had received instructions not to vary them. The schedule contained both fixed-choice and open-ended questions. A team of undergraduates used three specific coding booklets to encode the interviews. A research assistant punched all the data on machine-scoring cards. There were informal reliability checks made to ensure uniformity and accuracy of the coding and tabulating. For the spring survey the research assistants scored the forms by use of inexpensive overlays. Subsequent steps in the procedure resembled those in the fall.

2. The data gathered by personal interview provided many of the statements that constituted the initial statement pool. The latter also included items from other sources.

3. The criteria that Edwards (1957) proposed for evaluating the suitability of items proved helpful. The staff checked each item against these criteria.

4. The initial draft of the summated-rating scale contained eighty items. A subsample of members of the original populations not previously interviewed received these experimental forms. The data thus collected fur-

nished the raw materials for the analysis of each item by means of the check of internal consistency outlined by Edwards (1957). Subsequent administrations and refinement of the questionnaire produced a scale of twenty-eight items which were significant at the .05 level or more. The questionnaire for the pilot study had a reliability coefficient between its two subsections of .69.

(c) THE DEVELOPMENT OF THE SD

An early problem in the construction of the SD scale involved sampling the universe of possible items for inclusion in the scale. Triandos (1958) suggested a technique in his doctoral dissertation, but the results were not suitable for the restricted use of the SD envisioned.

The second attempt relied on the sampling design. The sample had ultimately included individuals selected at random; they might, it was reasoned, provide the scales needed, or at least possible clues to their identification. The method used in eliciting the words involved a theoretical issue to which there may be no immediate solution (Jenkins, 1963).

Briefly the controversy concerns the nature of meaning. There are students of verbal behavior who prefer not to make use of such an inaccessible concept such as meaning; they prefer the more operational term, meaningfulness. Words become associated, or linked, for a variety of reasons: frequency, contiguity, pronunciability. One determines the meaningfulness of a word by quantifying or indexing its associations. The most common associates of vocational education in this study were trades, training, and preparatory.*

There are others who believe the concept's meaning is explainable in stimulus-response terms, namely that symbols elicit covert intervening responses denoted as representational responses (see Bousfield, 1961, and Osgood's Commentary). In this the relation of the symbol to its representational response constitutes its meaning. In Osgood's formulation the response lies on a potentially measurable dimension formed by opposing anchor points of maximally intense responses.

The methodological problem involved the process of eliciting words. The words, not the purity of technique, became the focus of this approach. The interviewer asked the respondents at the close of the interview period what vocational education meant to them (Appendix B, Interview Schedule, last page). They followed these instructions and reported the results to the field director. The results proved disappointing, so the interviewers adopted a different tack. They asked the respondents what vocational education made them think of. This method generated an unwieldy pool of diverse items. A rough categorization of the pool appears in Appendix C. Admittedly the procedure is open to the criticism that the respondents reflected what the schedule or interviewer had provided. A check of the schedule and the lists ascertained that many of the words obtained in this fashion never appeared in the schedule.

---

*The associationists make no predictions as to what happens when the words are qualified: e.g., vocational education.

There was a multitude of subscales that underwent factor analysis during the succeeding months. Every subscale that loaded high (.60 or better) on Factor I and negligibly on the other factors remained in the scale. The scale ultimately used contained twenty subscales. The order of the subscales as they appeared in the SD depended upon a random process of ordering. A proportion of the poles of the subscales were alternated ("flip-flopped") to minimize respondent set. The respondent rated two concepts: college-preparatory education and vocational education in high school.

3. Characteristics of the Sample

A perusal of the sample characteristics (Table I) will reveal in greater detail the attributes that individuals who participated in the survey possessed. The data from the fall survey made possible this breakdown. There existed a hard core of individuals that would reply in neither survey. (The characteristics of the refusals are therefore wholly unknown. They resisted every inducement or appeal to participate.) There were some who refused in the fall but answered in the spring, and conversely the non-respondents column refers to those individuals that granted an interview in the fall, but refused the mail questionnaire.

The sample is predominantly masculine. Only in the case of households was a deliberate attempt made to reach a certain proportion of males. That most of the employers were male may be due to the preponderance of that sex holding executive positions.

A higher percentage of the combined samples fell in the 41-50 age bracket. This was to be expected since so many of those interviewed were parents of children 16 years or older, or who were experienced teachers and administrators. In a few cases grandparents were the legal guardians of high-school students.

The educational level of the respondents indicates a disproportionate number of college and advanced degree-holders than one encounters in the simple random sample. Most of the employers and members of households contributed the largest number to the lower levels. Those who had any advanced education received it at a business or trade school, and several of the employers had

TABLE I

SAMPLE CHARACTERISTICS

	Respondents		Non-Respondents	
	Percent	N	Percent	N
Sex				
Male	61	166	68	38
Female	35	95	32	18
Not Ascertained	4	10		
Age				
40 and under	29	79	29	16
41-50	40	108	32	18
51-60	23	61	27	15
61 and over	3	9	9	5
Not Ascertained	5	14	3	2
Education				
Less than 12 years	41	111	55	31
High school diploma	14	38	14	8
Some college	7	19	7	4
College, degree	19	51	14	8
Advanced degree	15	40	5	3
Not Ascertained	4	12	5	2
Length of Residence*				
Under one year	2	5	8	4
One up to two years	4	8		
Two to four	4	9	4	2
Five to nine	8	17	6	3
Ten to nineteen	26	56	18	9
Twenty or more	55	118	62	31
Not Ascertained	1	2		—
		N = 215		N = 49
Occupation				
Professional	22	59	11	6
Administrator	48	129	57	32
Worker	23	63	30	17
Unemployed	2	6	2	1
Not Ascertained	5	14		—
		N = 271		N = 56

*The school-professional interview schedule did not ask this information.

attended college but had not taken a degree. The educational levels of the non-respondents is an important consideration at this point. The largest percentage (55%) of non-respondents to the mail questionnaire had not obtained a high-school diploma. This is one of the hazards of the mail questionnaire (see Moser (1958) for a discussion on this and other pitfalls of mail questionnaires): the less-educated tend not to respond. It is undoubtedly even more discouraging in a survey on a topic which is of some importance to them.

Four-fifths of the entire sample has lived in Centreville ten or more years; almost three-fifths had lived there twenty years or more. Length of residence has significance in that many of the respondents might have known of the separate vocational school that Centreville once had. Several respondents referred to it; some with bitterness not so much towards the efficacy of its curriculum, but rather towards the stigma associated with it. Many of Centreville's male educational failures had found their way there eventually, a fact that did little to enhance the image of the school. In contrast, Centreville now has two comprehensive high schools for all its students.

Many of the households reported that the head of the household held an administrative position at his place of employment. The administrators include foremen as well as presidents and managers.

4. Sampling Characteristics

The populations which pertained to the study included the parents of eleventh-grade students, the employers located in the school district, and those school professionals, either teachers or administrators, who performed some function in relation to the city's two high schools. The sources for the samples were separate sampling frames obtained by various means.

For certain populations there are not always sampling frames readily available. Good frames have several distinguishing characteristics: they should be adequate, in that they should include the whole population to be surveyed; they should be complete if all the elements in the defined population are in fact on them; they should be accurate and as up-to-date as circumstances allow. Those frames that can be obtained with relative ease are often susceptible to the inadequacies any haphazard collection can possess. With the aforesaid criteria as guidelines it was possible to draw up frames suitable for the purposes at hand. Errors did occur in the sampling as a later check revealed, in spite of diligent effort to minimize them. There were two individuals, one a mother who was also a high-school teacher and another, a personnel director, father of a son in the eleventh grade, who appeared in two of three samples. Interviewers had to interview the parent whose sex was indicated beforehand by this office several days in advance of the field work. The procedure for obtaining interviews with personnel directors was to start with the company president and determine who made the personnel decisions. The probabilities therefore of such occurrences as these actually taking place were quite high.

A public source provided the sampling frame of employers. The frame listed company names, but no names of individuals. The arrangement of the companies provided their stratification into three levels. The lower level which contained the names of the smallest frame (1-20) also had the most numerous entries; the largest had the fewest. A previous preliminary study had indicated that small units were less acquainted with vocational education and appeared to be less favorable to it. The strata were therefore sampled by means of a variable sampling fraction in the ratio 1:4:9.

The names of firms located outside the boundaries of the school district did not appear on the sampling frames when ready for drawing the sample. Also excluded were doctors and dentists, taverns, night clubs, beauty and barber shops. Firms for which there were only box numbers were located by other means. Names of enterprises which had failed were eliminated. Each firm within a strata received a number; the total population of each stratum appears in Table II. A table of random numbers determined the inclusion of respondents in any stratum. Within each stratum sampling was random with replacement. Across all three strata 102 personal interviews were scheduled.

The pupil-personnel office of the Centreville Schools provided a current list of the eleventh-grade students and their home addresses, obtained from data cards. The original listing contained the names of many twins, one set of triplets, and several children residing in the same household. A household having more than one child in the eleventh-grade received only one number during the assignment of digits to households. The sampling design for this population was that of a simple random sample. The final list included 841 eligible households, of whom 200 were selected without replacement for inclusion in the study. The interview schedule contained provisions for any unintentional errors due to chance factors. Of the attained sample of 187 households three had more than one, but in no case more than one child in the eleventh grade. The interviewer received instructions to obtain the preliminary information from their first contact, but were to interview only the respondent indicated in the box marked sex. This was done to ensure that the study would include a larger number of men than women, as women are more often readily available for interviewing than men. This resulted in several refusals since the person so designated often would not grant the interview. An interview with one woman, whose husband, though selected, has been transferred to a distant city, was included in the data tabulated.

The Centreville school system publishes a handbook of personnel at the high-school level. This includes the names of persons new to the system. It was reasoned that the latter would know little about the Centreville voca-

TABLE II

CHARACTERISTICS OF THE SAMPLE

Group	N	Sample Expected		Sample Obtained		Sex Ratio (Spring*)	
		Fall	Spring	Fall	Spring	Male	Female
Heads of households	841	200	200	187	155	79	76**
Employers	610	102	102	94	71	66	5
Size of enterprise:							
0-20 employees	460	30	30	25	15	14	1
21-100 employees	114	48	48	46	38	36	2
101 or more employees	36	24	24	23	18	16	2
School teachers	94	30	30	30	26	16	10
Administrators	20	20	20	20	19	19	***

*The fall sex-ratios were equivalent, but the numbers for each sex were somewhat larger.

**In a mail questionnaire it is almost impossible to determine who actually completes the questionnaire: there was a stipulation that the respondent attest to the validity of the responses as representative of his views by signing the final page of the form. This may have discouraged those respondents who might have distrusted the request. It is also probable that some balked at the content of the questionnaire.

***One administrator returned her questionnaire too late for inclusion in the analysis.

tional programs; their names did not appear in the population. Centreville has two high schools and the sample drawn by the method of random sample without replacement reflects about an equal proportion of staff members from each. The newer high school had an extra grade level, the ninth, and during the course of the survey some of the teachers from this level commented on how inadequate they felt about their conception of the program. They did complete their interviews, however. There were ninety-four teachers in the list at the time of the drawing of the sample; thirty interviews were scheduled for them. In the final sample appeared the names of five instructors in fields allied to vocational education: three industrial teachers, another in the cooperative program, and one in business education. The data includes their interviews.

The sample of school administrators included the entire group of counselors, and administrators affiliated with the high schools. Both the Superintendent of Schools and the Director of Vocational Education were excluded from the study: the former was new to the system, while the latter assisted in the field work of the project.

The spring sample made use of the same sampling frame as in the fall. Information obtained at that fime permitted the direct mailing of the questionnaire to the intended recipient. In a majority of cases the individuals who refused to grant interviews in the fall returned their questionnaires unanswered. Some, however, did complete them, a fact that compensated for new refusals in the spring.

Appendix D contains a summary of the sampling statistics for the fall and spring surveys which takes into account the stratification of the employers. This section also contains the formulas used in the computer programs.

The fall respondents were not aware that they would receive a subsequent questionnaire at a later date. That there is a Hawthorne effect is not as likely as the probability that the earlier survey alerted the respondents to the coverage of vocational education in the various media which had increased considerably during the six-month period.

D. EVALUATION OF THE IVE

1. The Likert-Type Scale

Items in a Likert-type scale should be monotonically increasing functions of the latent variable continuum (Green, 1954, pp. 251-52). Table III provides a summary of the distribution of responses to each item. With two exceptions (Items 1 and 4) the number of responses increases from the lowest category (strongly disagree) to the fifth (agree) as curves. The items which do not follow this pattern (Items 1 and 4) are bimodal with responses falling to either side of the neutral point. The departure from the normal pattern in Item 1 is not so acute as it is for the other item which could be replaced by another item from the pool of items. Items 5, 7, and 28 are the best examples of the pattern. The tendency for the responses in the category strongly agree to diminish may reflect the intensity (or lack of it) of the attitudes toward the object, vocational education, in Centreville. Another possibility is that these items are in actuality non-monotonic (Green, 1954, pp. 343-44, for discussion of this point). One might describe Item 4 as "double-barreled," to use his apt expression.

The Likert-type scale is a single common-factor model. The mutual interrelations or consistency among the items define the latent attitude dimension; a single factor interrelates the items. Table IV lists the loadings on Factor I which is for all intents and purposes the evaluative factor, the common factor. The total factor loadings at the bottom of the table indicate that this factor is the most salient, as the loadings for the other factors are small in comparison with it. A perusal of the figures in column one reveals that the loadings are relatively high for each item, except Items 4 and 24.

Each item in the scale underwent analysis by T-ratio test. Cutoff points at the upper and lower quartiles of the distribution of scores for each sample permitted their division into high and low groups of equal sizes. Table V summarizes these T-ratios.

(a) RELIABILITY

The relationship between split-halves (odd-scores vs. even) of the scale is linear. The obtained correlation between actual and predicted values of Y (even-scores) while controlling on X (odd-scores) is 0.80 (Figure 1). For this many items a typical value of the correlation in a Likert-type scale

TABLE III

LIKERT SCALE:
DISTRIBUTION OF ITEM RESPONSES

Item	No. of Respondents	Mean	Scoring SD	D	U	A	SA
1	246	3.22	21	60	28	117	20
2	246	3.57	3	35	49	138	21
3	246	4.10	2	7	24	145	68
4	246	2.88	36	75	36	80	19
5	246	4.28	3	5	16	118	104
6	246	3.72	5	22	48	134	37
7	246	4.30	1	8	11	122	104
8	246	3.59	6	25	61	126	28
9	246	4.30	1	5	9	136	95
10	246	3.85	9	13	25	157	42
11	246	4.09	0	16	12	152	66
12	246	3.55	7	46	33	125	35
13	246	3.97	4	13	22	154	53
14	246	3.92	5	12	26	157	46
15	246	4.04	2	12	18	155	59
16	246	3.87	5	5	52	139	45
17	246	3.23	8	51	72	106	9
18	246	3.91	5	9	24	173	35
19	246	3.97	3	6	31	162	44
20	246	3.59	3	16	75	137	15
21	246	3.83	4	19	24	167	32
22	246	3.52	5	30	58	138	15
23	246	3.91	3	4	41	162	36
24	246	3.24	4	57	70	106	9
25	246	3.97	0	8	29	171	38
26	246	3.58	7	32	48	127	32
27	246	4.24	3	3	14	139	87
28	246	4.33	4	6	7	118	111
	M = 106.6			SD = 13.3			

TABLE IV

LIKERT SCALE:
FACTOR ANALYSIS (UNROTATED) OF THE INDIVIDUAL ITEMS

Item	Factor I	II	III	IV	V
1	.47	.13	.26	.10	.21
2	.61	-.19	.22	-.01	-.09
3	.54	.25	-.16	-.19	.05
4	.30	-.16	.44	-.01	.03
5	.61	.33	-.02	.01	.15
6	.69	-.19	.03	.12	-.02
7	.61	.29	-.04	.02	-.06
8	.45	-.29	-.12	-.18	-.04
9	.63	-.25	-.10	.11	.01
10	.66	.08	.21	-.01	.17
11	.65	-.05	-.06	.10	-.19
12	.43	.28	.21	-.30	.04
13	.63	.12	.11	.16	-.02
14	.71	.14	.06	.21	-.03
15	.58	.26	-.00	.04	-.16
16	.74	-.26	.00	-.08	-.06
17	.55	.09	.27	.18	-.14
18	.78	-.18	-.02	.14	-.10
19	.66	.19	-.19	-.08	-.10
20	.49	-.14	-.03	-.21	-.24
21	.57	.21	.04	-.36	-.02
22	.64	-.33	.12	-.15	.07
23	.63	.30	-.21	.01	-.13
24	.35	-.27	.01	-.14	-.12
25	.56	-.06	-.26	.22	.01
26	.55	.05	-.08	-.02	.20
27	.57	-.30	-.20	-.10	.28
28	.75	-.06	-.17	.08	.26
	9.96	1.28	.78	.52	.50

TABLE V

LIKERT SCALE: SUMMARY OF T-RATIOS FOR INDIVIDUAL ITEMS

Item	T-Ratios			
	Households	Employers	School Personnel	School Administrators
High-Low:	(N=37/37)	(N=18/18*)	(N=6/7*)	(N=5/5*)
1	4.06	4.76	2.66	2.36
2	6.19	6.48	3.53	1.41
3	6.25	4.38	0.00	1.63
4	3.83	2.89	9.72	0.59
5	4.95	6.06	0.98	1.37
6	7.40	7.31	2.66	2.65
7	5.55	4.49	1.90	2.45
8	6.61	4.25	1.67	2.19
9	5.30	4.12	3.09	4.00
10	6.84	6.05	2.02	0.00
11	6.26	5.06	1.09	1.46
12	4.93	4.09	0.43	0.80
13	5.55	5.39	2.19	1.90
14	5.96	6.46	1.84	1.63
15	4.37	4.62	2.60	1.50
16	7.93	5.24	3.03	6.00
17	5.59	6.11	6.49	0.00
18	6.60	6.92	2.06	4.00
19	4.97	5.30	0.13	2.53
20	4.43	5.52	1.98	1.79
21	5.71	5.37	1.07	0.25
22	6.54	8.90	2.36	2.92
23	6.34	4.68	1.84	1.90
24	4.27	3.83	2.57	4.02
25	5.11	3.59	1.47	2.12
26	5.50	6.92	2.86	1.10
27	5.92	3.76	3.17	1.50
28	6.66	5.03	5.52	1.41

*"The value of T is a measure of the extent to which a given statement differentiates between the high and low groups. As a crude and approximate rule of thumb, we may regard any T value equal to or greater than 1.75 as indicating that average response of the high and low groups to a statement differs significantly provided we have 25 or more subjects in the high group and also the low group" (Edwards, 1957, p. 153). For various reasons there are no significance levels indicated for Groups, B, C, and D (Hays, 1963, pp. 306-308).

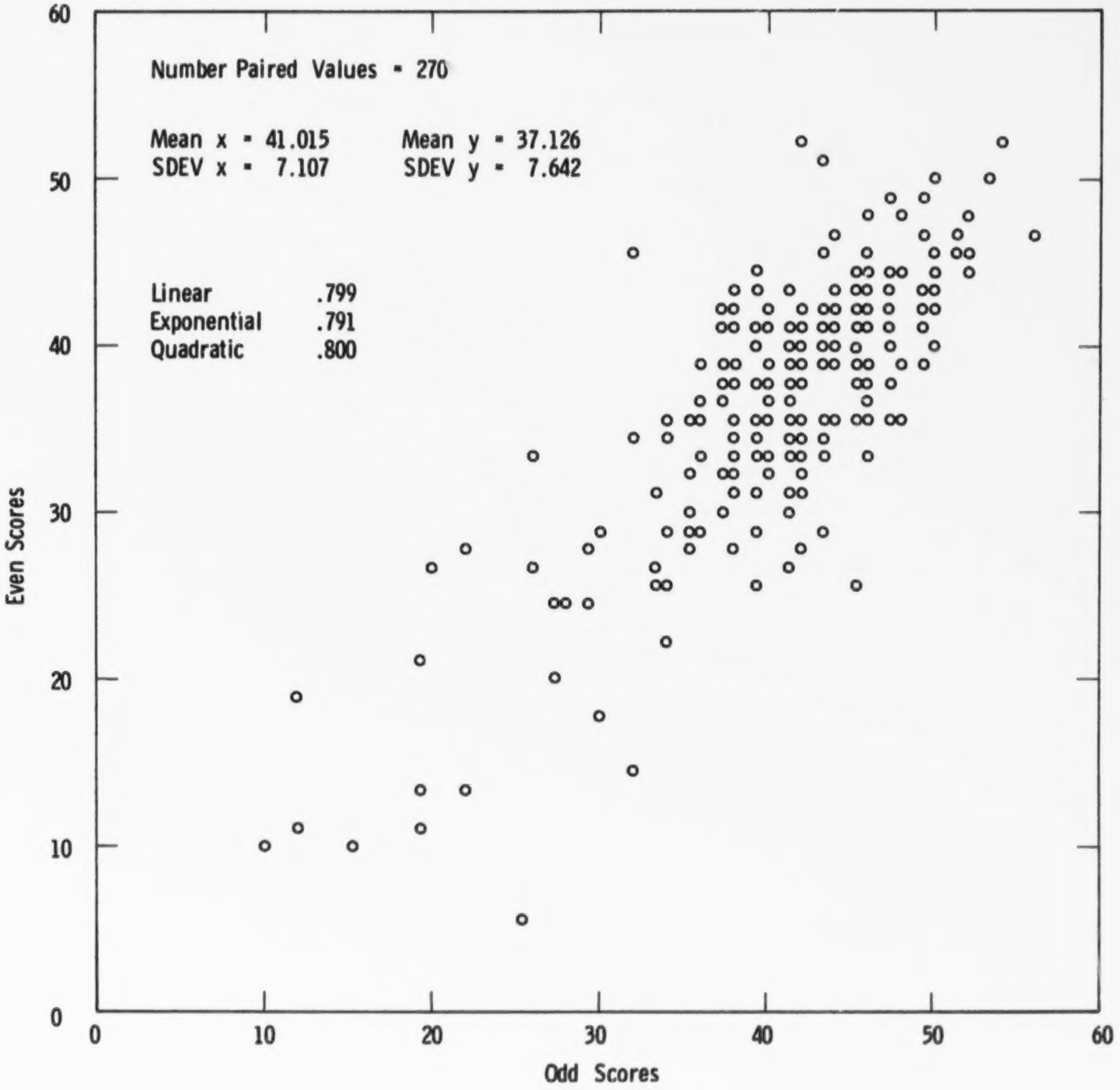


Figure 1. Likert Scale: Correlation between odd-half and even-half scores.

should be about 0.90. The correlation for the IVE scale obtained by this method is a conservative estimate, however.

(b) VALIDITY

Gulliksen (Green, p. 340) suggested a method to determine the intrinsic validity of a scale. It included studying the judgments of a group of experts. The investigator assembled a pool of forty-two items which he administered to a group of participants (N=21) in a leadership training course at the University. The Vocational Department has selected these individuals on the basis of their experience in vocational education as future leaders in the state's leadership development program. They responded to a request to rank the items in terms of relevance to vocational education. They had seven categories from which to choose: most relevant to most irrelevant. The median scores for each item appear in Table VI. The fourteen items which were rated in terms of relevance, but which did not appear in the scale appear in Appendix C. The rankings are on the basis of twenty-eight items. The mean validity rating for relevance of the scale is 5.90.

(c) POWER OF THE IVE

During the course of an investigation similar to this, an investigator faces a series of problems which require decisions. Usually there is a great deal of subjectivity involved since in most cases there is not sufficient information available to use as the basis for making a choice of alternatives. As more and more facilities become available to the researcher, there becomes available to him certain techniques which can contribute to the formulation of a logical and justifiable decision, at least by the statistics presented.

Decision theory holds at present an equivocal status in the behavioral sciences. There are not many facts available in most cases to specify what the relative losses would be, given a series of alternative decisions to be made. There does exist, however, some way of estimating potential loss. Think in terms of contemplated changes in the school curriculum. The school board of a district might come to the conclusion that the vocational education program in its high school was clearly inadequate. The members decide to make

TABLE VI

LIKERT SCALE:
RELEVANCE OF IVE SUMMATED RATING ITEMS TO VOCATIONAL EDUCATION AS RATED BY A SELECTED GROUP OF PROFESSIONALS IN VOCATIONAL EDUCATION

Item	Median	Rank
1	5.57	22
2	5.60	20
3	5.25	28
4	5.32	27
5	5.92	14
6	6.06	12
7	5.37	26
8	6.19	11
9	6.76	4
10	5.40	24.5
11	6.25	9
12	5.62	18.5
13	5.62	18.5
14	5.85	15.5
15	5.58	21
16	6.77	2.5
17	5.40	24.5
18	6.77	2.5
19	6.33	8
20	6.55	5.5
21	5.85	15.5
22	6.54	7
23	5.69	17
24	6.00	13
25	6.55	5.5
26	5.43	23
27	6.90	1
28	6.22	10
	Mean = 5.90	N = 21

use of the survey instrument such as the IVE to assess how favorable the influential groups in the district feel about such a curriculum at present, and in addition, to determine to some extent their perception of it. They set aside money in the budget for such an undertaking and refer it to the school superintendent. He supervises the study to its completion.

The study reveals that a fair number of individuals are unfavorable to such a program and a larger number are but lukewarm in the intensity of their feelings. Since these represent individuals whose support will facilitate any improvement in the program, he proposes an information campaign designed to persuade as many as possible of the wisdom of the contemplated change. The problem now concerns choosing the proper group to whom to direct the campaign. There is no question about the favorable members of each group; however, would it be more judicious to appeal to the unfavorable segments of each group, or to collapse all the groups into a larger unit, and on the basis of some arbitrary criterion, such as degree of favorableness - unfavorableness, determine their common characteristics and thus proceed?

The power curves for a scale such as the IVE make it possible for the administrator to base his decision on more than mere conjecture. If there is no difference between the means of both groups that is significant, he could decide to use the Likert Scale as a dependent variable for forming these groups based on degree of favorableness and study the resulting profiles. If there is some difference (a procedure to accomplish this appears in the data analysis section) he has to weigh the probabilities as to how correct his acceptance of the significance is, or what chance of committing error he is taking.

Figure 2a indicates that for the two samples, there is a difference of 5.26 between their means. The householders and employers to some extent do differ in their means scores. The researcher might well argue that about 60% of the time he would take less risk of being in error were he to reject the hypothesis that there is no difference between the mean greater than zero than were he to accept such a hypothesis. This reasoning also holds true for Figure 2b (employers and school teachers) between .54 - .79 in favor of rejection while between .21 - .46 lie the probabilities of accepting this difference as true when it is false; see also Figure 2c, employers and school administrators. In this case the researcher might advise his superintendent to concentrate on the employers and householders as distinct groups.

2. The Semantic Differential

Osgood (1957) has set four properties as hallmarks of the ideal measuring instrument: (a) high loading on the factors they represent; (b) high correlation with the other scales representing the same factor; (c) low correlation with scales representing other factors and hence low loading on other

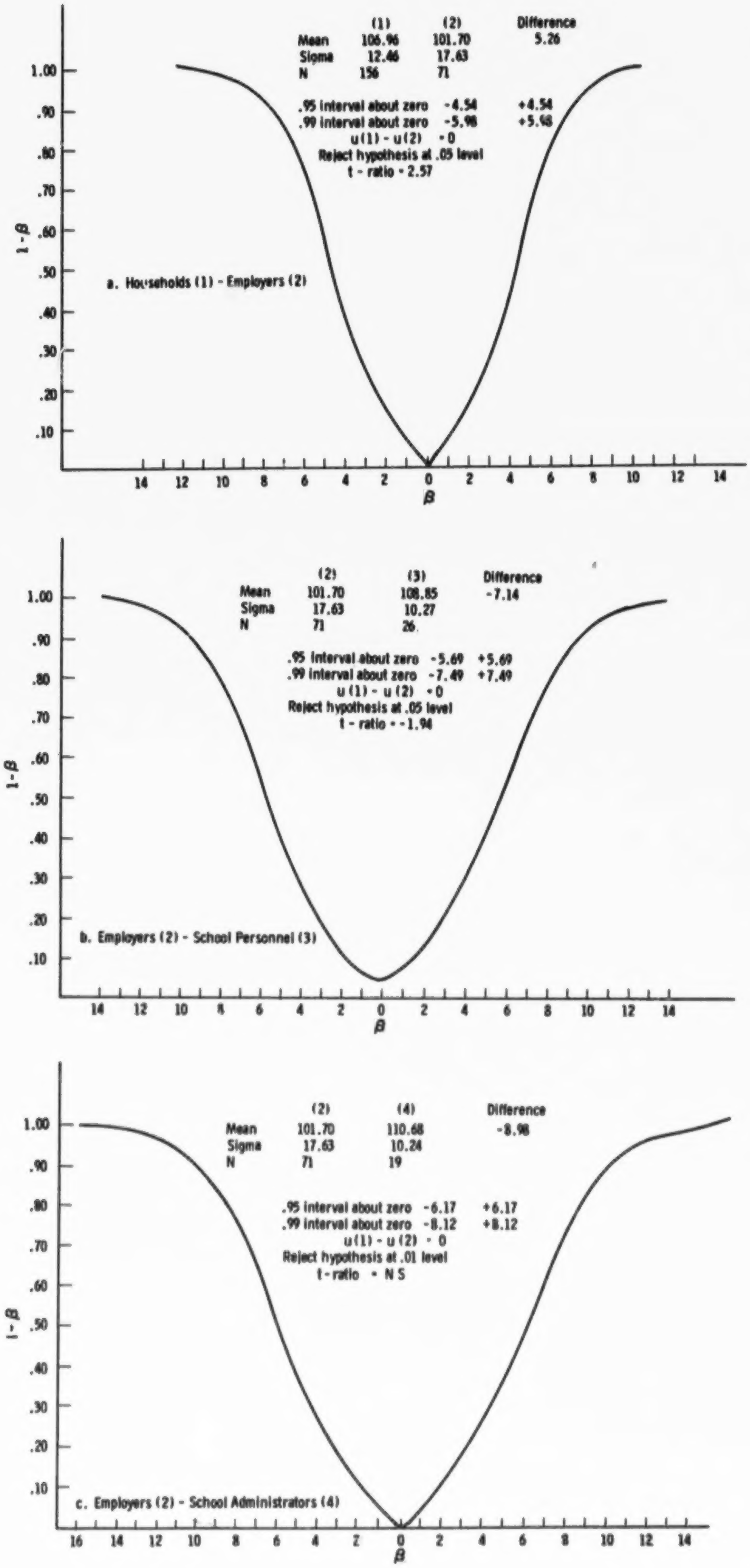


Figure 2. Power curves for Likert Scale.

factors; and (d) a high degree of stability across the various concepts judged. Table VII lists the loadings obtained on the most recent administration of the Semantic Differential.

The staff maintained a record of the factor loadings obtained during the pilot studies and the administrations of the IVE (Table VIII). The words used in the scale for the latter retained similar loadings across repeated tests in the field. At the head of each column appears the number of respondents in each trial in Centreville. Columns 2 and 5 contain the loadings obtained on the two concepts: vocational education and college-prep education in high school. The subscales of the SD have high loadings on the evaluative factor; they correlate highly with other scales representing the same factor (in this case with any of the other subscales in the SD). This table also lists the subscale values for words that Osgood made use of. The larger value obtained for these same words when used in the IVE derives from the context. This is known as concept scale interaction: the meanings of subscales and their relations to other subscales vary considerably with the concept being judged. In this context the evaluative nature of the IVE enhances the evaluative dimension of the word. Across concepts these subscales do not vary to the extent they might when used in a regular semantic differential to measure the entire meaning of a word and not merely its evaluative dimension. The mean of the loadings across administrations appears in the final column of the table.

A subscale in the specialized sense used here refers to a pair of bipolar adjectives such as right or wrong. The word, subscale, corresponds in usage to the words, items or statement, in the attitude scales mentioned. The usual SD has a variable number of such subscales sampled from the factors. This study has concentrated on isolating a single factor and uses twenty subscales collected into a large scale to rate a concept.

Each subscale has a numerical weight assigned to its seven categories of agreement: the positive categories: very, quite, and somewhat, a neutral point, and the negative categories: very, quite, and somewhat. It makes little difference to which direction 1-7, 7-1, the scoring proceeds so long as it is consistent. A subscale scored in the wrong direction should result in a loading with a sign opposite to that intended. The sum of the subscale scores indicate the respondent's total score. In the event of a subscale scored incorrectly the total score would need some readjustment.

(a) THE RELIABILITY OF THE SD

The correlation between the expected and obtained values of Y (even scores) with the X values (odd scores) held constant, is .93 for VE and .90 for CP. Figures 3 and 4 derive from the combined scores of all groups. The scales correlate .37 with each other across both concepts (Figure 5).

TABLE VII

UNROTATED FACTOR LOADINGS OF SUBSCALES OBTAINED ON CONCEPT

Subscale	Vocational Education in High School					College Preparatory Program in High School				
	Factor:					Factor:				
	I	II	III	IV	V	I	II	III	IV	V
Worthy	-.73	-.18	-.13	-.14	.01	.76	.21	-.23	.06	-.01
Successful	-.77	.22	.11	-.17	.03	.79	-.13	-.19	-.17	.11
Interesting	-.77	.03	.00	.05	-.09	.89	.08	-.18	-.06	.08
Satisfactory	-.64	.43	.06	-.07	.12	.82	.34	-.09	-.18	-.05
Rewarding	-.69	.05	-.08	.00	.36	.71	-.27	-.17	-.03	.00
Practical	-.78	.02	-.22	-.09	-.12	.78	-.15	-.11	.17	-.05
Desirable	-.75	-.27	.08	.13	-.14	.90	-.16	-.17	.05	.03
Essential	-.62	-.44	.28	.06	.07	.82	-.15	.05	-.11	-.16
Effective	-.69	.15	.30	-.22	.09	.77	-.18	.09	.11	-.19
Important	-.56	-.46	.28	-.07	-.08	.84	.29	-.06	.10	-.17
Helpful	-.74	-.32	-.15	-.10	.04	.84	.01	.14	-.01	-.07
Valuable	-.83	-.33	-.09	-.00	-.05	.82	-.12	.10	-.25	-.14
Meaningful	-.79	-.18	-.24	-.07	-.05	.92	.09	.06	.10	-.08
Realistic	-.65	.02	-.15	-.21	.10	.92	.05	.12	.16	.12
Definite	-.63	.39	.12	-.09	-.16	.89	.09	.20	.02	.07
Attractive	-.73	.11	.14	.16	.07	.87	-.02	.20	.00	.10
Profitable	-.77	.04	-.09	.34	.22	.78	-.13	.00	.10	.05
Purposeful	-.74	.33	-.12	.03	-.17	.86	.03	-.05	.13	.07
Secure	-.71	.26	.12	.11	-.11	.90	.05	.11	-.14	.05
Respectable	-.79	.11	-.04	.26	-.09	.80	.01	.09	-.07	.19
	10.39	1.36	.53	.44	.35	13.99	.50	.36	.28	.22

TABLE VIII

STABILITY OF UNROTATED FACTOR LOADINGS OF FACTOR I OVER ADMINISTRATIONS OF THE SEMANTIC DIFFERENTIAL SCALE

	Stability of Factor I Over Administrations							Osgood	Mean
N =	67	131	70	68	129	69	73		
Worthy	.73	.67	.85	.76	.77	.92	.84	.50	79.1
Successful	.77	.68	.87	.53	.57	.82	.82	.51	72.3
Interesting	.79	.73	.81	.48	.68	.73	.75		71.0
Satisfactory	.65	.65	.64	.80	.69	.88	-		71.8
Rewarding	.83	.74	.75	.78	.75	.81	-		77.7
Practical	.90	.80	.82	.71	.79	.79	.84		80.7
Desirable	.80	.67	.79	.48	.60	.90	.74		71.1
Essential	.72	.47	.81	.42	.68	.87	.77		67.7
Effective	.48	.75	.75	.66	.77	.81	.83		72.1
Important	.58	.60	.86	.56	.56	.90	.67	.38	67.6
Helpful	.63	.75	.90	.73	.76	.91	.84	1.00	78.9
Valuable	.82	.81	.89	.83	.79	.94	.76	.38	83.4
Meaningful	.88	.79	.89	.82	.60	.93	.82	.41	81.9
Realistic	.67	.70	.79	.66	.67	.73	.81		71.9
Definite	.75	.70	.72	.72	.60	.70	.63		68.9
Attractive	.76	.70	.75	.74	.75	.81	.71		74.6
Profitable	.84	.70	.78	.78	.58	.87	.77		77.3
Purposeful	.77	.86	.73	.86	.76	.91	.78		81.0
Secure	.67	.65	.75	.62	.67	.73	.55		66.3
Respectable	.84	.78	.74	.74	.72	.90	.71		77.6

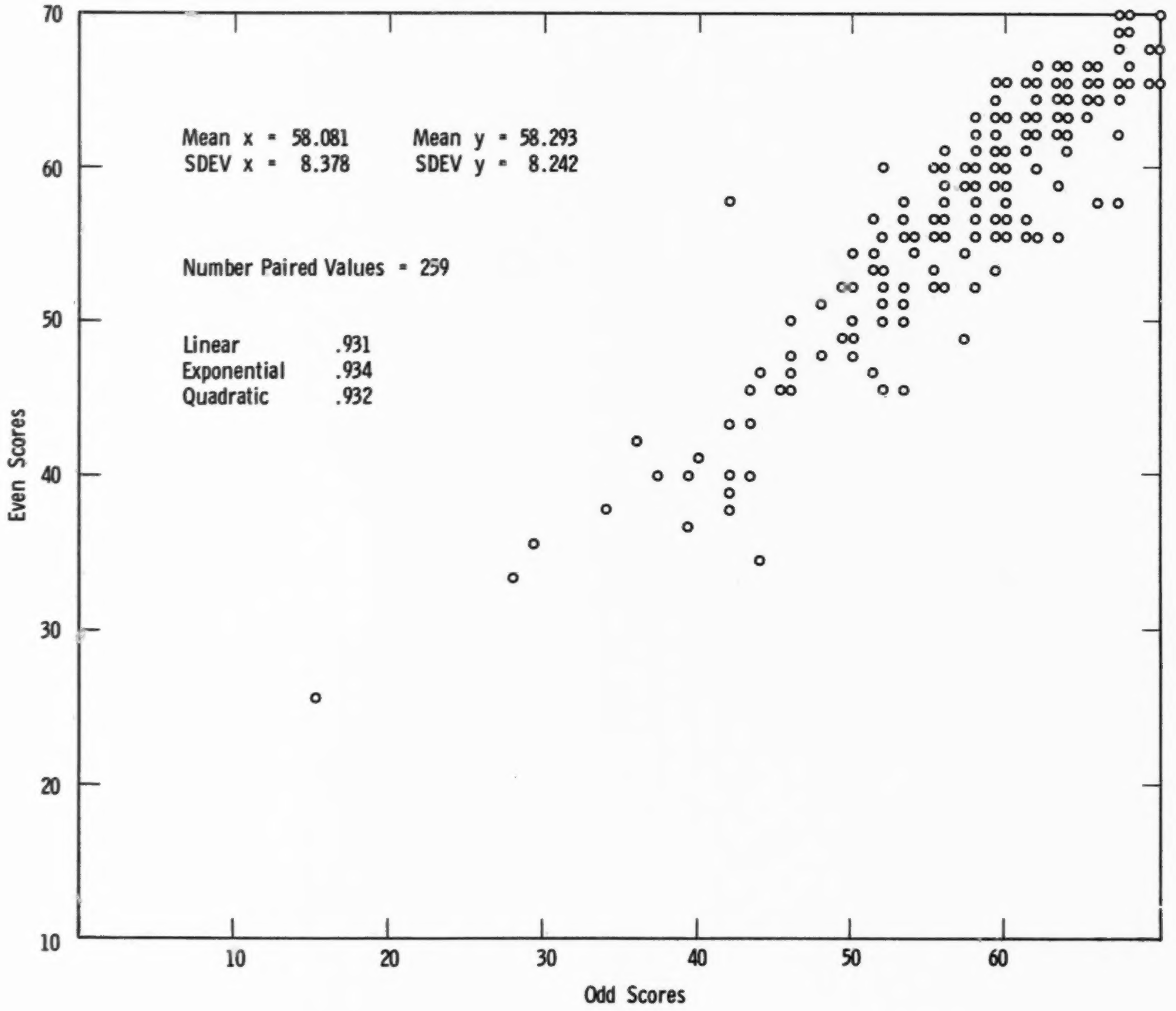


Figure 3. Semantic Differential Scale: Correlation between odd-half and even-half scores (concept: college preparatory education in high school).

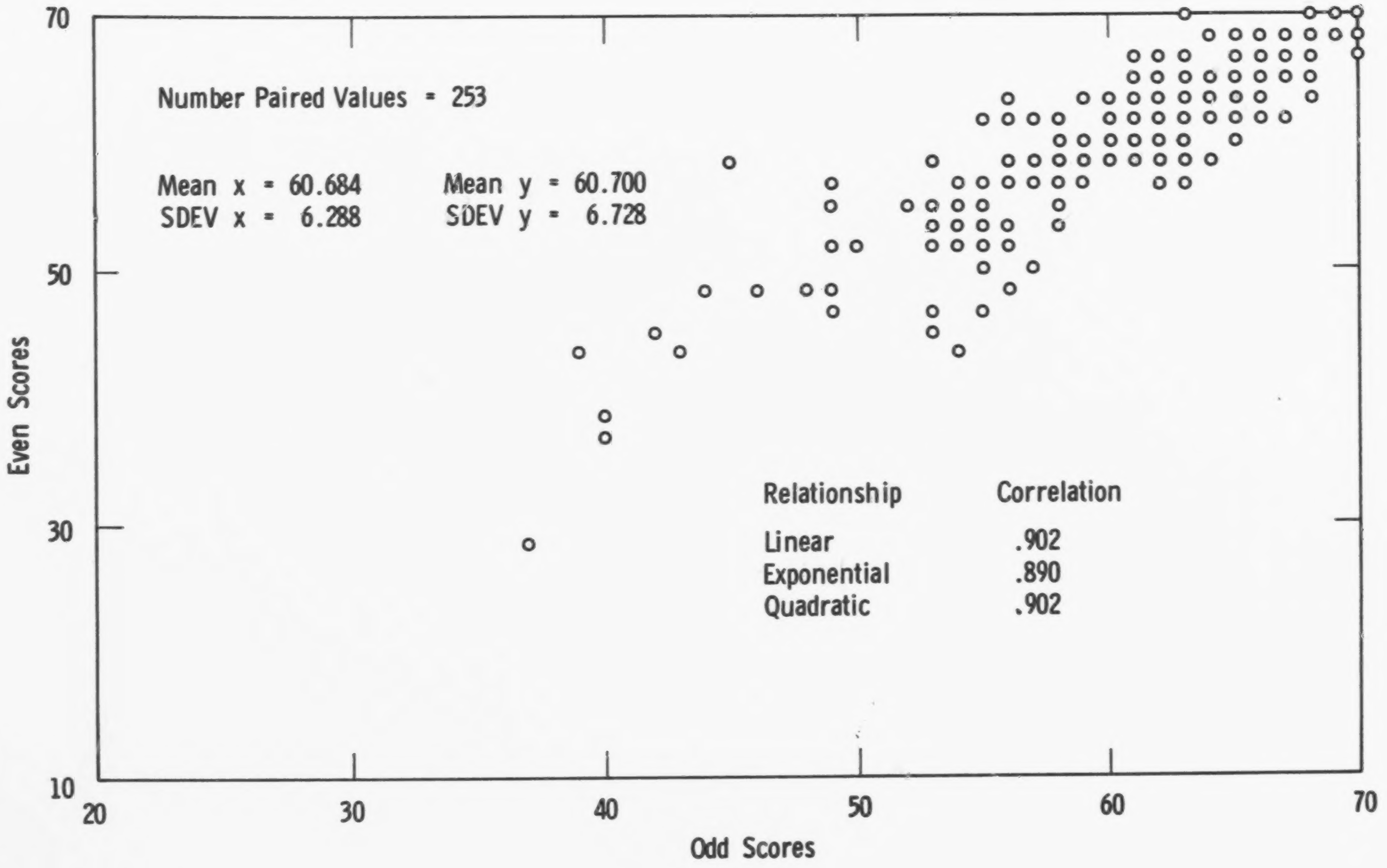


Figure 4. Semantic Differential Scale: Correlation between odd-half and even-half scores (concept: vocational education in high school).

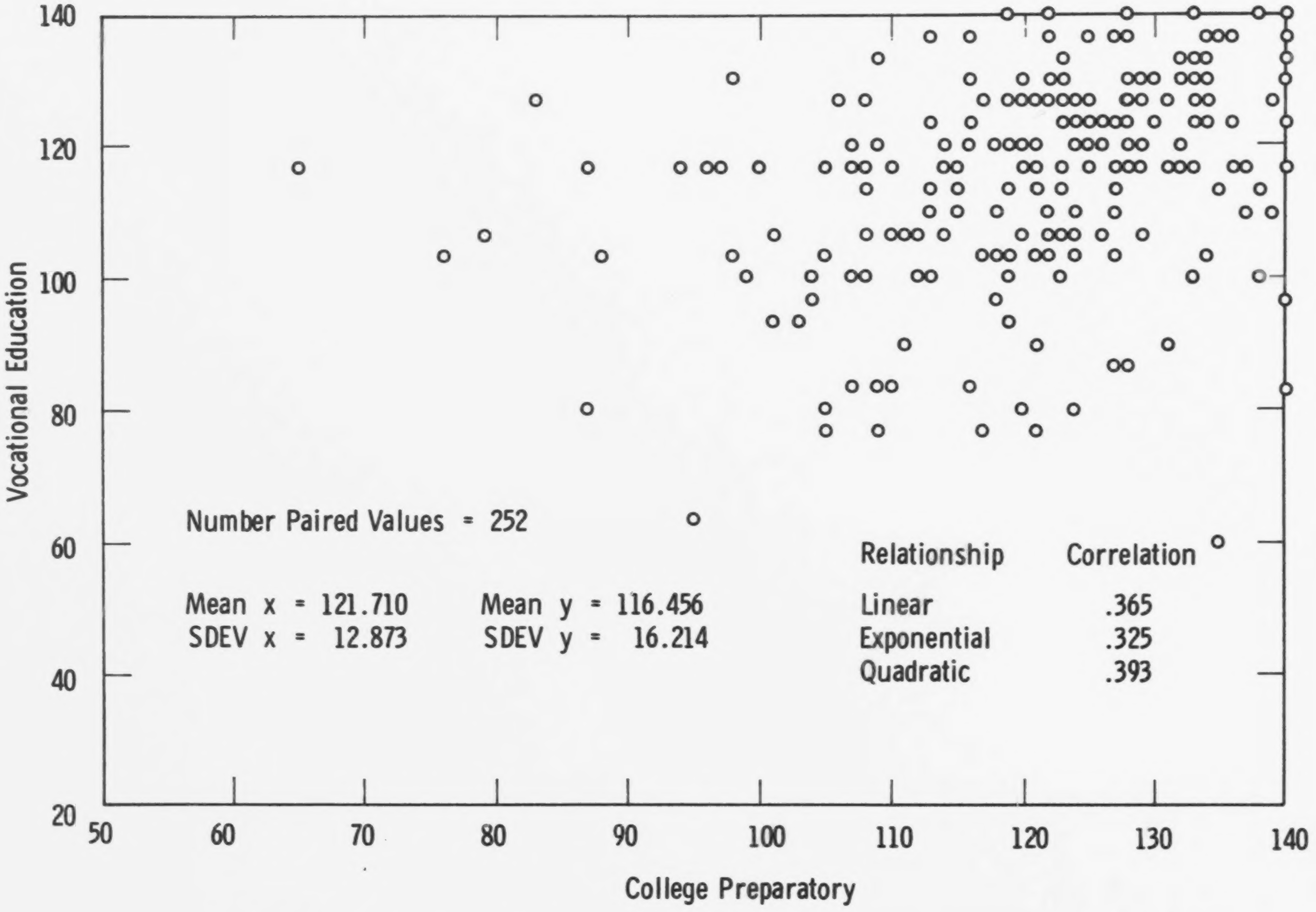


Figure 5. Semantic Differential Scale: Correlation between scores obtained on the concept: college-preparatory education in high schools, and on the concept: vocational education in high school.

(b) THE VALIDITY OF THE SD SCALE

Previous attempts at establishing the validity of the evaluative dimension of the SD have included Thurstone and Guttman scales as criteria (Osgood, 1957; MacLean, 1961). The Likert-type scale, though not ideal for such a comparison, correlates .41 (linear) - .49 (quadratic) with the SD. (Figure 6). For employers the correlations are .57 - .64 (Figure 7) for households, .33 - .40 (Figure 8) and for school professionals, about .10. A similar pattern of correlations resulted when the entire set of scores were subdivided into three groups of low, medium, and high favorability.

3. Summary and Implications

(a) SUMMARY

A conservative estimate of the reliability of the two sections of the IVE places the correlation between .40 and .50. Each section has considerable reliability of its own. The validity of the Likert type scale depends on the judgment of experts in the field of vocational education. Attempts at validation of the SD depends to a large extent on the validity of the Likert-type scale.

(b) IMPLICATIONS

Osgood (1957) has proposed a reexamination of the problem of "master," or generalized, attitude scales. He has cited the efforts of Remmers and his associates to develop such scales, as well as an account of the criticism directed toward such attempts. In the face of contrary opinion he adheres to his belief that such scales may result from the SD. The gist of his position is that such scales are possible if the scales maintain high intercorrelations among themselves across the objects being evaluated and that the summation derived from them jointly display high and roughly equal correlations with the various specific attitude-measuring instruments used as criteria. An analysis of the SD scale may clarify how certain evaluative terms in the IVE SD scale could furnish a nucleus of such a general attitude scale.

The cognitive element necessary for properly responding to each scale permits a rough classification of the entire set of scales into two subsets labeled for convenience as general and specific. There are 12 items in one set and 8 in the other (Table VIII).

The respondent need know very little about the concept, vocational education, in order to indicate his attitude toward it. What a set of master

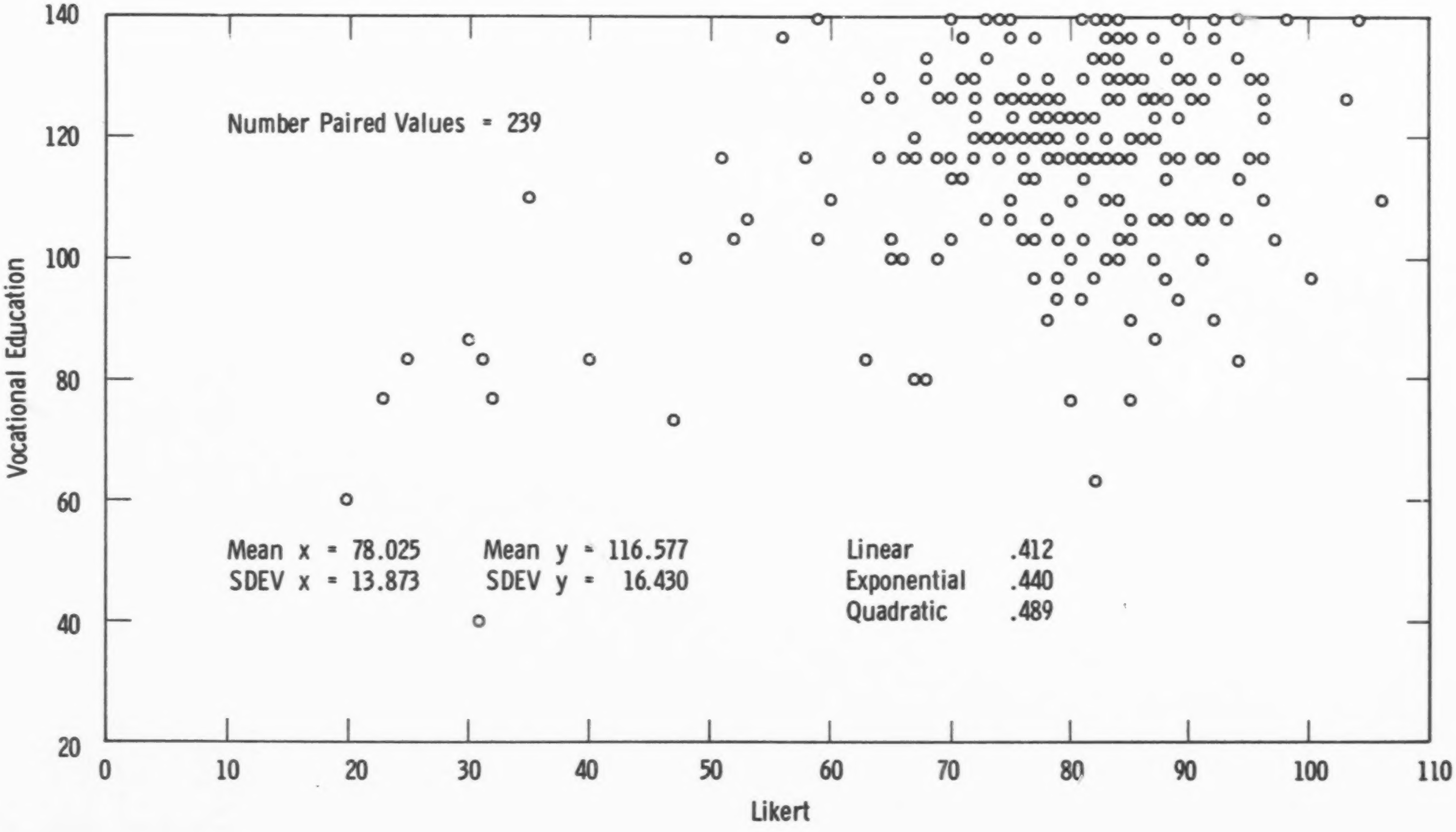


Figure 6. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (households, employers, and school teachers).

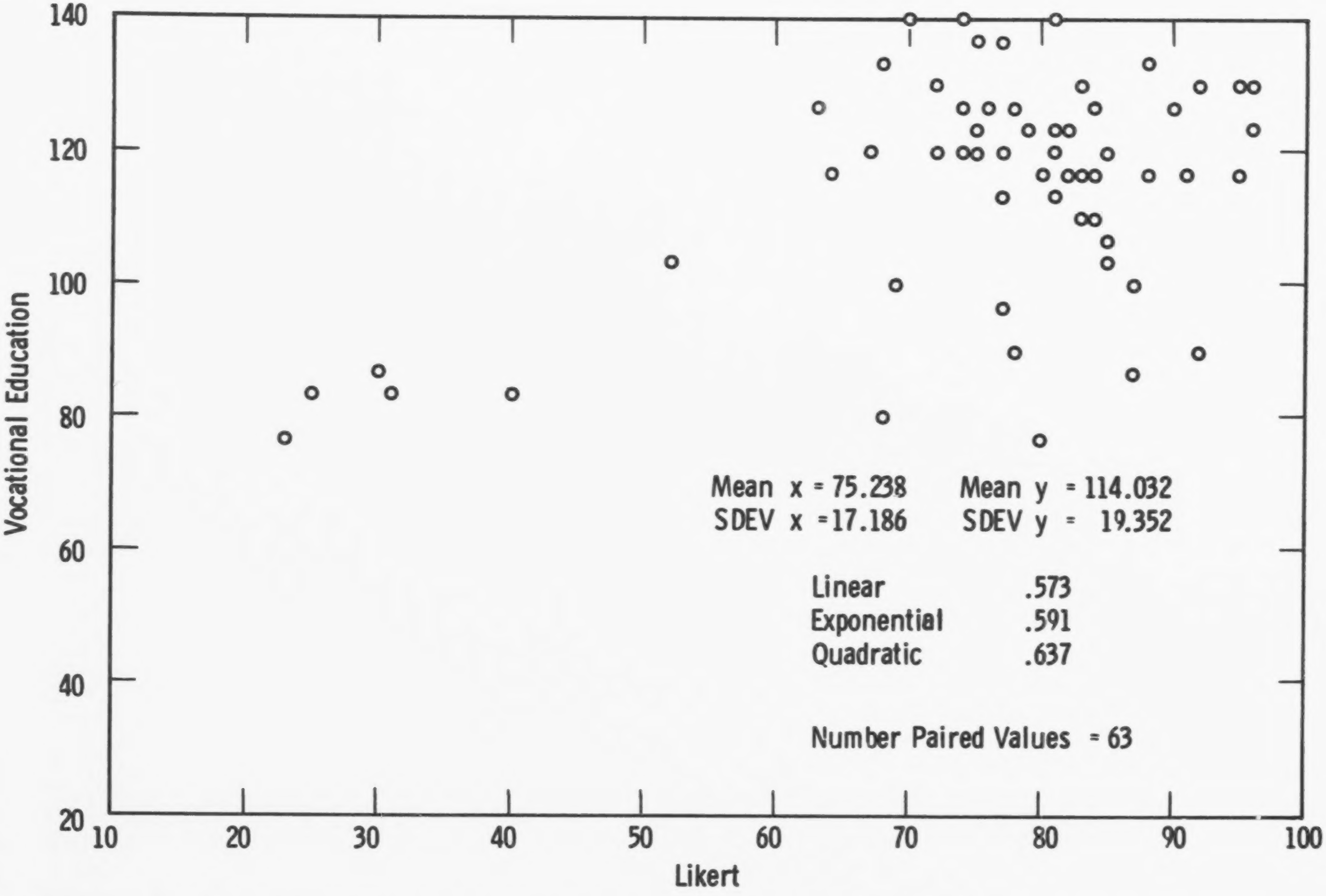


Figure 7. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (employers only).

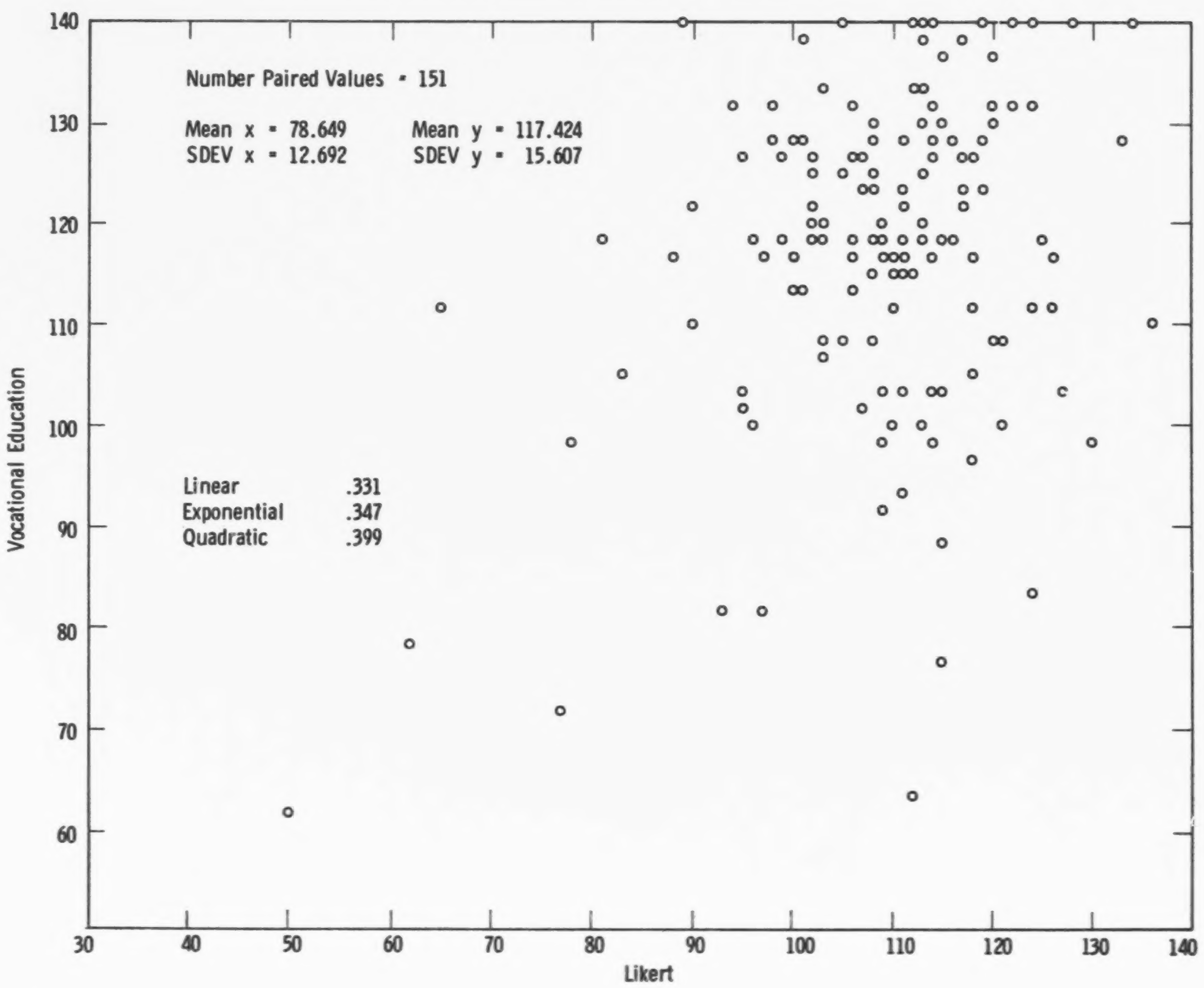


Figure 8. Image of Vocational Education Scale: Correlation between Likert Scale scores and scores obtained on concept: vocational education in high school (households only).

scales should measure is the purely evaluative aspect of the attitude: how the individual feels about a general object. An object may be (or may not be) essentially *important* and *valuable*; on the other hand to respond accurately to such words as *successful*, *effective*, *respectable* requires more than orientation towards the object: there must also be a much more fully developed cognition of it. The general scale gives considerable indications that with minor changes it could be used to rate any object in a school situation. The attitudes toward the addition of a facility such as a *swimming pool* to the high school suggests itself as a possible topic a community might wish to evaluate using such a scale paired with some other attitude scale to serve as criterion.

The staff made tentative steps in this direction.

a. They adjusted the Likert by removing items 1 and 4, and scoring only the items listed as general on the SD scale. The correlation although linear, proved to be .28 (Figure 9). The effect of cognition on the evaluative dimension of qualifying terms needs to be investigated further under more controlled conditions. This suggests that, were the object to be rated perceived as *unfavorable*, the more critical the favorable respondent, the lower would be his SD score and hence would correlate less with the Likert-type rating scale.

b. The IVE has undergone further testing in an another Michigan city similar in many respects to Centreville. This version had thirty items, and an experimental model of the Semantic Differential scale. It was designed to diminish in so far as possible the tendency to respond with maximum favorableness to every subscale. A copy of this form appears in Appendix B. A cursory analysis of initial returns indicate that for every six respondents who complete the Likert-type rating scale, one of them does not attempt the SD scale, and one more answers it partially. The time limits of this study make a more extensive analysis of the results impossible at present.

General	Specific
worthy-unworthy	purposeful-aimless
practical-impractical	successful-unsuccessful
desirable-undesirable	satisfactory-unsatisfactory
essential-unessential	effective-ineffective
important-unimportant	attractive-unattractive
helpful-harmful	realistic-unrealistic
valuable-worthless	definite-indefinite
meaningful-meaningless	secure-insecure
interesting-boring	
respectable-disreputable	
rewarding-unrewarding	
profitable-unprofitable	

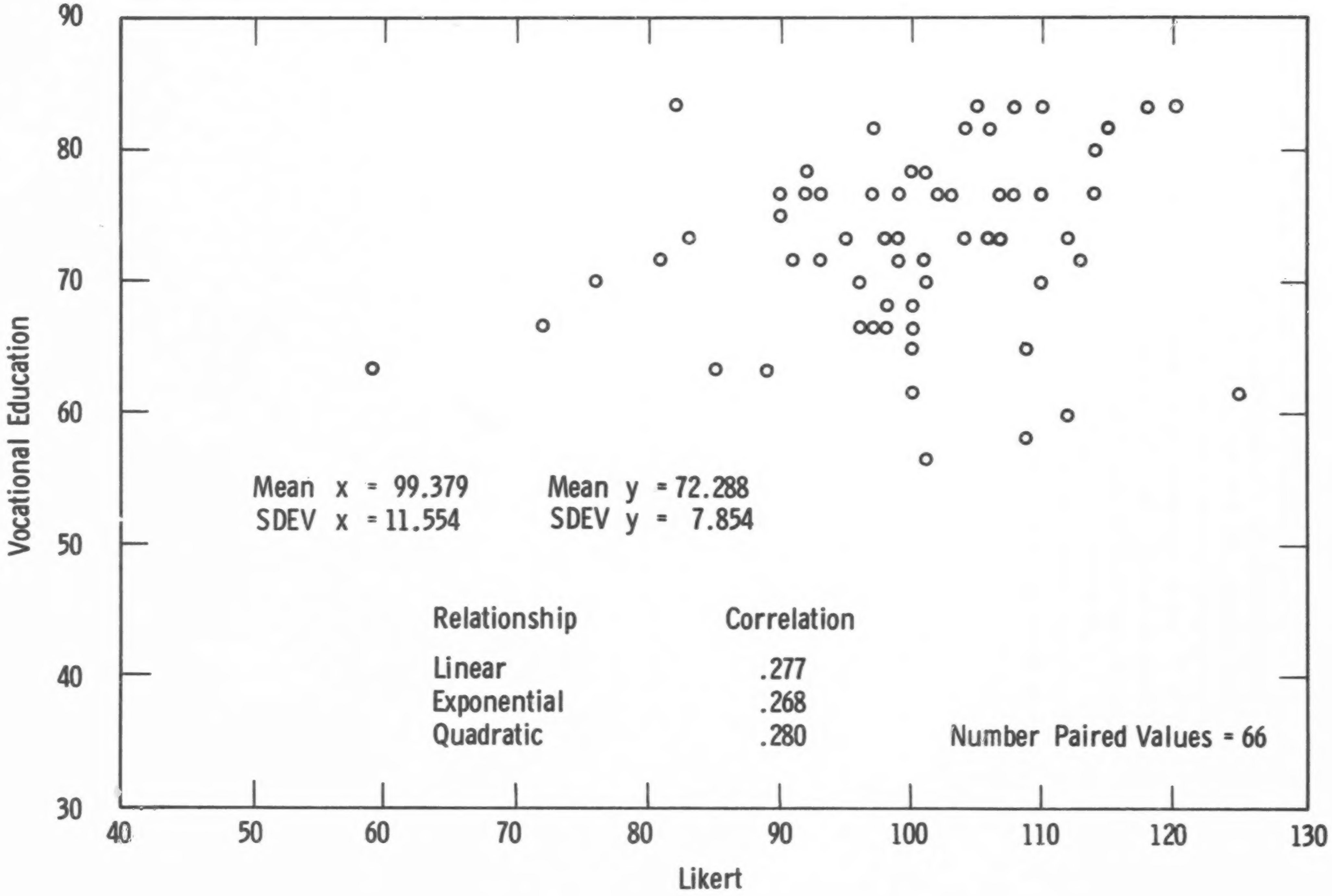


Figure 9. Image of Vocational Education Scale: Correlation between Likert Scale adjusted scores and adjusted scores obtained on concept: vocational education in high school (sample at households).

The difference between mean scores of the top and bottom 25% of the household sample served as criterion for the division into the two categories. Inasmuch as this difference proved not to be significant, the usual T-test did not furnish any basis upon which to substantiate this grouping, which was one of several possible. In his recent book,* C. Coombs develops with particular cogency a critical analysis of evaluative scales. In view of the difficulties encountered in this research with the development of a Semantic Differential it might prove worthwhile for anyone wishing to use the instrument to be familiar with the inherent theoretical weakness of evaluative scales as set forth in that volume.

---

*Coombs, Clyde H., A Theory of Data, John Wiley and Sons, New York, 1964, pp. 334-339.

PART II

THE USE OF THE IMAGE OF VOCATIONAL EDUCATION SCALE

BLANK PAGE

A. PREVAILING ATTITUDES

1. Items that Discriminated Between Groups

THE LIKERT SCALE

A major assumption of this study was that there were important differences between the mean attitude scores of certain groups concerned with vocational education; that, as a group, a sample of individuals such as employers would differ from a sample of households in terms of favorableness or unfavorableness towards the concept of a vocational-education program at the high-school level. Each group would be expected to differ one from the other in terms of its variability in responses to the individual items of the Likert scale. It would then prove possible to identify in what way the statements which contributed to the differences reflected components of the group's underlying attitudes towards the object in question.

There were 12 combinations of groups possible. Most of the mean differences among them are not significant. The school professionals (administrators and teachers) differ much more from the employers than they do from the households; this difference, however, misses significance by several points: one could assume that there is a difference but the statistical results are not precise enough to substantiate it. The differences between school professionals are negligible. There is a difference between the mean attitude scores of households and employers, the former being the more favorable. This difference underwent two computations: the first time by means of a computer program for computing T ratios, secondly, by means of a desk calculator while using a weighting system for determining the mean and standard deviation of the stratified sample of employees. The T ratio, diminished somewhat in size by this latter procedure, still proved to be significant (Appendix D).

(1) Households and Employers

The households differed from employers in terms of favorableness of attitude toward the concept under investigation on the basis of the grouped Likert scores. That is to say, in general, a sample of parents or guardians of eleventh-grade students in Centreville drawn at random proved to be more favorable in attitude toward vocational education in the Centreville high schools than did a stratified sample of employers from enterprises of all sizes in Centreville.

TABLE IX

A SUMMARY OF DIFFERENCES BETWEEN MEANS FOR ALL GROUPS

	N	M	SD	est SE_M	T-Ratio
Group 1	155	106.96	12.46	.99	2.57
Group 2	71	101.70	17.63	1.9	
Group 2	71	101.70	17.63	1.9	1.94
Group 3	26	108.85	10.27		
Group 1	155	106.96	12.46	.99	NS
Group 3	26	108.85	10.30	1.74	
Group 1	155	106.96	12.46	.99	NS
Group 4	19	110.70	12.30	--	
Group 2	71	101.70	17.63	1.90	NS
Group 4	19	110.70	12.30	--	
Group 3	26	108.85	10.30	1.74	NS
Group 4	19	110.70	12.30	--	

There were several items in the Likert scale upon which their attitudes diverged. The favorability of the households appears in the nature of item upon which they differ: those items that discriminated households from employers were all favorable to vocational education, whereas the opposite held true for the items that discriminated employers from households

Discussion

Households in Centreville favor the expansion of the program when compared with employers. They react strongly in favor of the statement that vocational education has a necessary place in the high school curriculum. They want to see more students enrolled in its programs; even if it should mean a heavier burden on the existing school budget,they favor an expansion of the program. They appear to consider properly conducted vocational programs as providing a valuable service to the community in furnishing adaptable workers for the community's labor supply.

Employers perceive the vocational programs, not so much in terms of facilities or materials, but in terms of the youth with whom they come in contact. They believe that the advantages of a successful vocational program are exaggerated. Likely explanations for such a belief are that on the one

TABLE X

A SUMMARY OF ITEMS THAT DISCRIMINATED BETWEEN EMPLOYERS AND HOUSEHOLDS

Likert Scale Item No	Item	T-Ratio
	A. Items that Discriminated Households from Employers	
16	There should be more money set aside in the school budget for vocational education.	2.76
18	I should like to see vocational education encouraged more among high-school students.	2.64
28	I am thoroughly sold on offering vocational education in high school.	2.56
20	I believe good vocational-education programs in public schools attract new industries to a community.	2.40
6	I would favor expanding vocational-education programs even if available funds remain the same.	2.08
	B. Items that Discriminated Employers from Households	
3	Those high-school students who want to take vocational education are not mature enough to profit from it.	3.19
10	I am opposed to expanding vocational-education programs when so many students need the basic subjects.	2.85
19	In my opinion, vocational education in the high school is highly overrated.	2.09

hand, they feel what they would require from such a program is too advanced or too specific to their operation for a high school youth to learn; or, they assume that the usual applicant for employment must be typical of the vocational-education student. With the exception of cooperating employers very few, if any, personnel directors inquire of their applicants if they have taken the vocational program in the high school. Furthermore they base their employment practices mainly on personal interviews and on an occasional recommendation. It might be possible, therefore, to assume that the applicant whom they normally encounter is neither typical of the average vocational-education graduate (the Director of Vocational Education cannot fill the requests for such students made by knowledgeable employers), nor typical of the average high-school student.

(2) School Professionals: Teachers and Administrators

Among school professionals there was only one item upon which administrators differed from teachers.

TABLE XI

AN ITEM THAT DISCRIMINATED BETWEEN SCHOOL PROFESSIONALS: ADMINISTRATORS FROM TEACHERS

Likert Scale Item No	Item	T-Ratio
16	There should be more money set aside in the schools budget for vocational education.	3.06

Discussion

The administrators are in a much better position to perceive the actual school situation in its entirety and, since recommendations for allocation of funds is a matter that falls within their purview, a difference such as this is not too surprising. However, as the facilities that both high schools provide, while not sumptuous, are apparently adequate (with the exception of a trade-welding classroom) and equal to those enjoyed by other school activities, the teachers may have other reasons for not wishing to see more money allocated.

(3) School Professionals and Employers

There is a common strand that links the items on which school professionals scored more favorably than employers: the need to see more students in such a program at the high-school level. Administrators go further in perceiving that this is to be accomplished by encouraging more students to elect such a program and by allocating more funds for the program.

TABLE XII

A SUMMARY OF ITEMS THAT DISCRIMINATED BETWEEN EMPLOYERS AND SCHOOL PROFESSIONALS

Likert Scale Item No.	Item	T-Ratio
	A. Items that Discriminated School Professionals from Employers	
16	There should be more money set aside in the school budget for vocational education. (in contrast with administrators)	3.20
18	I should like to see vocational education encouraged more among high school students. (in contrast with administrators)	2.64
8	In my opinion there are not enough students in vocational education at the high school level.	2.11
	B. Items that Discriminated Employers from School Professionals	
1	It is more important to provide many students with a sound basic education than to use the time for vocational education. (in contrast with administrators)	2.85
26	I favor reducing vocational educational programs when available school funds are in short supply. (in contrast with administrators)	2.39
17	Most students who take vocational education in high school lack too many other scholastic skills. (in contrast with administrators)	2.39
10	I am opposed to expanding vocational education programs in high school when so many students need the basic subjects. (in contrast with teachers)	2.39
14	I do not think vocational education in high school is as necessary for students as are other worthwhile programs. (in contrast with teachers)	2.31
19	In my opinion vocational education in high school is highly overrated. (in contrast with teachers)	2.24

Discussion

These items may refer to the students who lack the kinds of skills employers feel are important these days such as sufficient skill to make easy and accurate computations, to read and interpret measuring instruments and blueprints, to spell properly in typing and filing. Employers are very negative about the prevalent attitudes of the youth who seek employment; somewhere the latter have to acquire the attitude of wanting to contribute to the development of the enterprise, and not merely reap benefits from it. Some employers have the impression (which could be quite erroneous as far as graduates of vocational-education programs are concerned) that the high schools are not providing those students whose services the employer may engage with the basic education needed to acquire the rudiments of the position for which they are hired. Until these students have assimilated more than a nodding acquaintance with the fundamentals of communication and enumeration, employers feel that the wisdom of the expansion of such a program, as vocational education is open to question and, in times of financial stress for a district, reduction in the program might be worthy of consideration as a possible means of paring the budget.

(4) Households and School Professionals

There was no appreciable difference between the mean scores for the groups of households, teachers, and administrators. Teachers differed from households only in that they believed the vocational program to be as necessary as are other programs. The same theme runs through the differences between households and administrators. Basic education is important and vocational education not so necessary for students as other worthwhile programs.

Discussion

The modern parent is college-oriented in his plans for his children. Most of the parents interviewed in this survey entertain the hope that their child will attend some college, even if it be at the junior-college level. They demonstrate this expectation by disagreeing with the school professionals on the comparative necessity of vocational education and other programs. Much of the variability in answers to Item 14 may be due to the carelessly-worded phrase, necessary for students. It should read "necessary for most students." (Edwards, 1957) This error in the versions of the Likert Scale passed undetected until too late for correction. School professionals were favorable to the item because they generally believe some form of vocational education (probably initiatory programs) serve to develop well-rounded youth. They agree that the student in a vocational education program lacks too many other scholastic skills. By this, however, they may not intend what to the layman are the fundamentals of the curriculum: skill in reading, computation, and written expression; they may hold an interpretation of the school's objectives which is broader than mere skill attainment. Students in vocational education may not display these additional behaviors school professionals feel are

TABLE XIII

A SUMMARY OF ITEMS THAT DISCRIMINATED BETWEEN HOUSEHOLDS AND SCHOOL PROFESSIONALS

Likert Scale Item No	Item	T-Ratio
	A. Item that Discriminated Households from School Teachers	
14	I do not think vocational education in high school is as necessary for students as are other worthwhile programs.	2.09
	B. Item that Discriminated School Teachers from Households	
17	Most students who take vocational education in high school in my opinion lack too many other scholastic skills.	2.85
	C. Items that Discriminated School Administrators from Households	
17	Most students who take vocational education in high school in my opinion lack too many other scholastic skills.	3.43
3	Those high school students who would want to take vocational education are not mature enough to profit from it.	2.58
	High schools should encourage bright students to enter a vocational education program.	2.31
16	There should be more money set aside in the school budget for vocational education.	2.08
	D. Items that Discriminated Households from School Administrators	
1	It is more important to provide many students with a sound basic education than to use the time for vocational education.	2.65
14	I do not think vocational education in high school is as necessary for students as are other worthwhile programs.	2.01

important such as other interests such as participation in clubs and organizations or athletics.

Administrators would like to encourage the student whom the vocational program best suits to enter it. The image of the youth currently in the program is a composite of youth and immature behavior, inappropriate to the requirements of the program. The determination of a suitable program for each student will require a larger expenditure of funds in this area of the curriculum than is currently the practice, an expenditure the school administrators support.

Strong agreement with the objective of cooperating with others to develop the best vocational education program for a community is highly indicative of favorability toward the program. Neither of the lay groups differed on the offers of assistance, but the school personnel were much more favorable to offering their cooperation in some way. This may be a component of the teacher's dedication and altruism, and thus to be expected. However, had they not shown this difference in attitude, it could have indicated something amiss in the vocational program.

(5) Summary

In this study the general favorability of parents towards education includes the vocational program. They want to see a good program for youth who could benefit from such a program. The college-preparatory program concerns them a bit more, however. Employers want to see basic subjects such as science and math stressed. School administrators want not only to expand the program but also to upgrade it. School teachers while favorable in general are not satisfied with the scholastic records of students in vocational programs.

2. Semantic Differential Profiles

Centreville numbers more than 2500 students in its high schools, grades 10-12. This number divides almost evenly into boys and girls. One high school began operation in a new facility in the fall of 1963; many of these students had attended the other building, however.

It is difficult to specify with confidence who is enrolled in a vocational education program in Centreville other than seniors. In its annual report, the Centreville Department of Vocational Education and Practical Arts notes that "Vocational Education, regardless of the subject area, aims for the development of occupational competency through appropriate education." Courses included under this rubric are the following: machine shop, auto shop, electricity electronics, drafting, graphics, painting and welding. Yet this publication also refers to these courses as instances of industrial education, as many of these same courses "may provide experiences which develop an understanding of materials and processes of industry and at the same time develop general manipulative skills." When elected under this heading, they are for the purpose of broadening the general education of the individual, not his employment potential. In many instances they prove to be introductory to a program of vocational education, but the enrollment figures in the courses obscure the number of students who actually do choose to continue in that line of endeavor. The actual number is far less than one would assume from the course enrollments. Current estimates of the number of individuals who elect a vocational program and who graduate in it hover around 20% of the graduating class. Of these roughly 30% move on to higher education. Estimates as to the number of individuals who are in a college-oriented program fluctuate about 60%. If this estimate remains constant through the three years of senior high school, a group about equal in size to those in vocational education, are neither going on to higher education nor are prepared to work. Another aspect of the problem which merits consideration focuses on the percentage of those who graduate in a program oriented to college who leave college after one year; estimates place this percentage at half of the college-oriented group. Thus one year after graduation, as many as 50% of the previous year's graduating class could enter the labor market with but few qualifications. Many of the girls will marry and some boys will enter the service, which diminishes the estimate to some extent, but there is only conjecture in Centreville as to what actually does happen.

In such a context where there is considerable lack of definition between industrial arts and vocational education, below the senior year, it is not surprising that the SD reflects to a considerable extent the vagueness of the program. The expectations, misgivings, and specific doubts that each group has in regard to the program became clearer than before when we examine the comparison profiles based on their respective scores.

The American high school has long served as a bridge to college for many youth. At times the efforts expended in their behalf have deprived those not destined to obtain a college degree of a fair, if not an equal, share of the solicitude and concern those going on have received. This is not to denigrate the high school's function to provide institutions of higher learning with students educated to their capacity at the time of leaving high school; rather it is to examine how vocational education in high school must improve in order to achieve a status nearly comparable to that of the college-preparatory program, that both may be seen as programs equally dedicated to the pursuit of excellence.

Earlier in this report several attempts at correlating the two sections of the IVE, the Likert Scale and the Semantic Differential, were presented. It was obvious that the correlations between the scores obtained by the employers were higher than those between the scores of the school professionals, which were very low and almost independent. It has since become apparent that the response made by employers to the Semantic Differential have the virtue of consistency and predictability. Despite several hypotheses to account for the discrepancy among school professional scores, it was not possible to determine by an appropriate test the plausibility of any of them.

Respectable

Two of the conjectures as to why vocational education should be less respectable than college-preparatory program in the school centered upon the quality of the instruction and the type of the student in the program. The fall survey revealed no antipathy towards vocational teachers personally. And several school professionals accredited the success of such teachers with students in their program to the effects of shared interests. A search for some clue as to whether failures or behavior problems in vocational programs predominated revealed little or nothing. One parent answered a questionnaire with an extensive comment on vocational education (or industrial arts). He refers to what the son has hold him. "...In the courses which he is taking, he feels that the training, the subject matter, and the opportunity to attain knowledge is very good. At the same time, his remarks made it clearly evident that most of the others in the class are making the minimum effort to get all that is possible from the class work and are only interested in the credits... and a bare passing grade... The type of person taking the course is not the good student..., but I get the picture of the cigarette-smoking, cocky fellow who is in general, a below average student..." School professionals believed that students elected vocational courses because of social-class factors, not primarily becuase of the threat of failure, or as a result of a special interest. It is because their friends select a vocational type course that some individuals choose the same course. If the cocky youngster typifies the average student, and this cockiness in turn exemplifies some value stressed by his social class, the discrepancy in respectability may in part derive from the social status of the two programs.

Householders in contrast to other groups believe vocational education to be more respectable, while administrators as a group perceive it as less respectable. School personnel (teachers and administrators) on the other hand see the college-prep program as more respectable than do the laymen (Figures 10 and 11). Program against program, school teachers and school administrators believe the vocational education program to be considerably less respectable than the college prep (Figures 12,13).

Secure (Future)

A theme that frequently appears in the interviews with householders is that of security. A program like vocational education, in name at least, training and education for employment, strengthens their assurance, that were such a program wholeheartedly implemented, their future would be that much less threatening. A glance at the list of words compiled during the construction of the SD shows how often the association of the one with the other occurred (Appendix C).

Employers are more pessimistic about the secure future a program of studies in vocational education will bring. They, as well as teachers and administrators, fail to share the householder's mild enthusiasm. In their eyes the

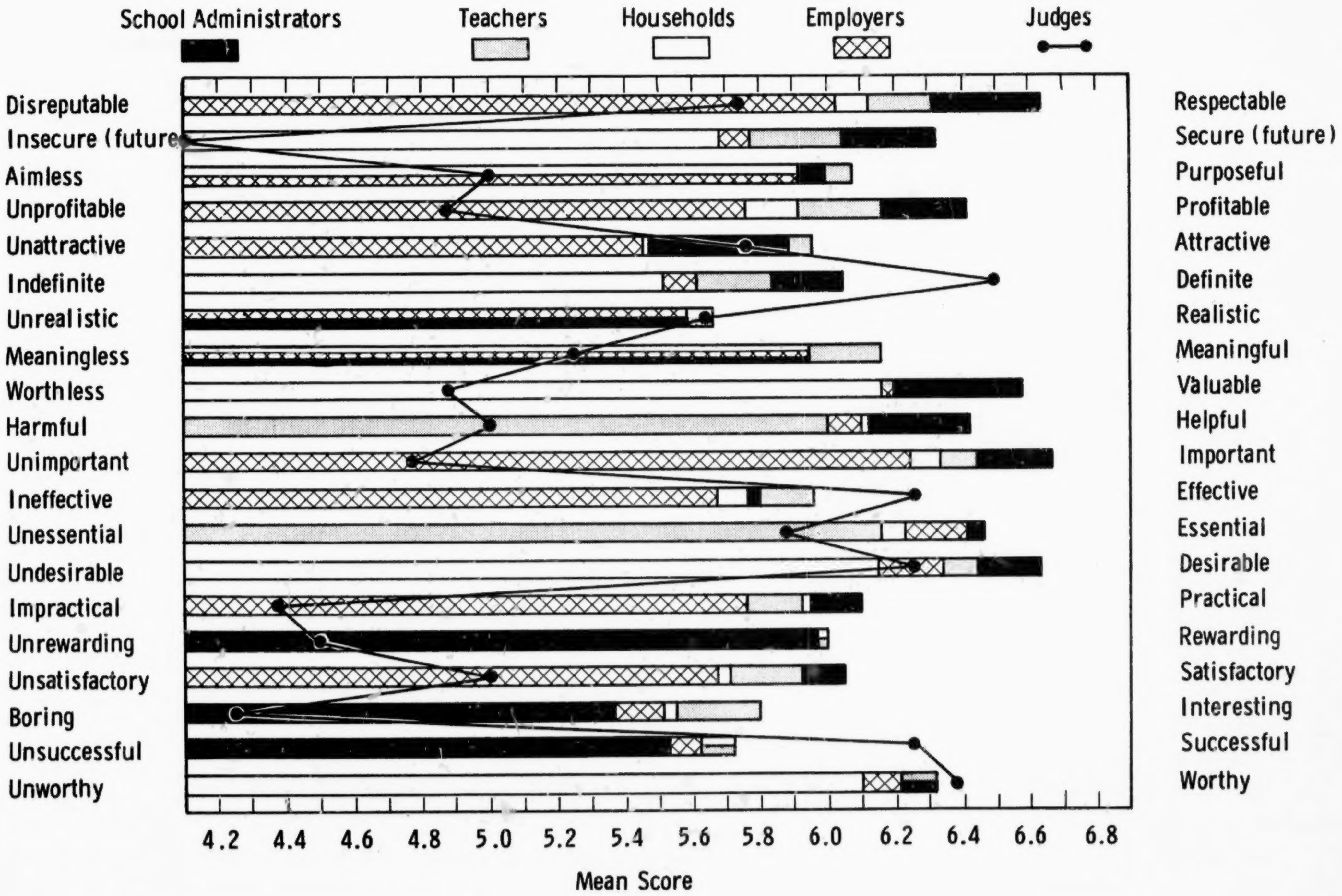


Figure 10. A Comparison Profile: College-preparatory education in high school as perceived by all groups.

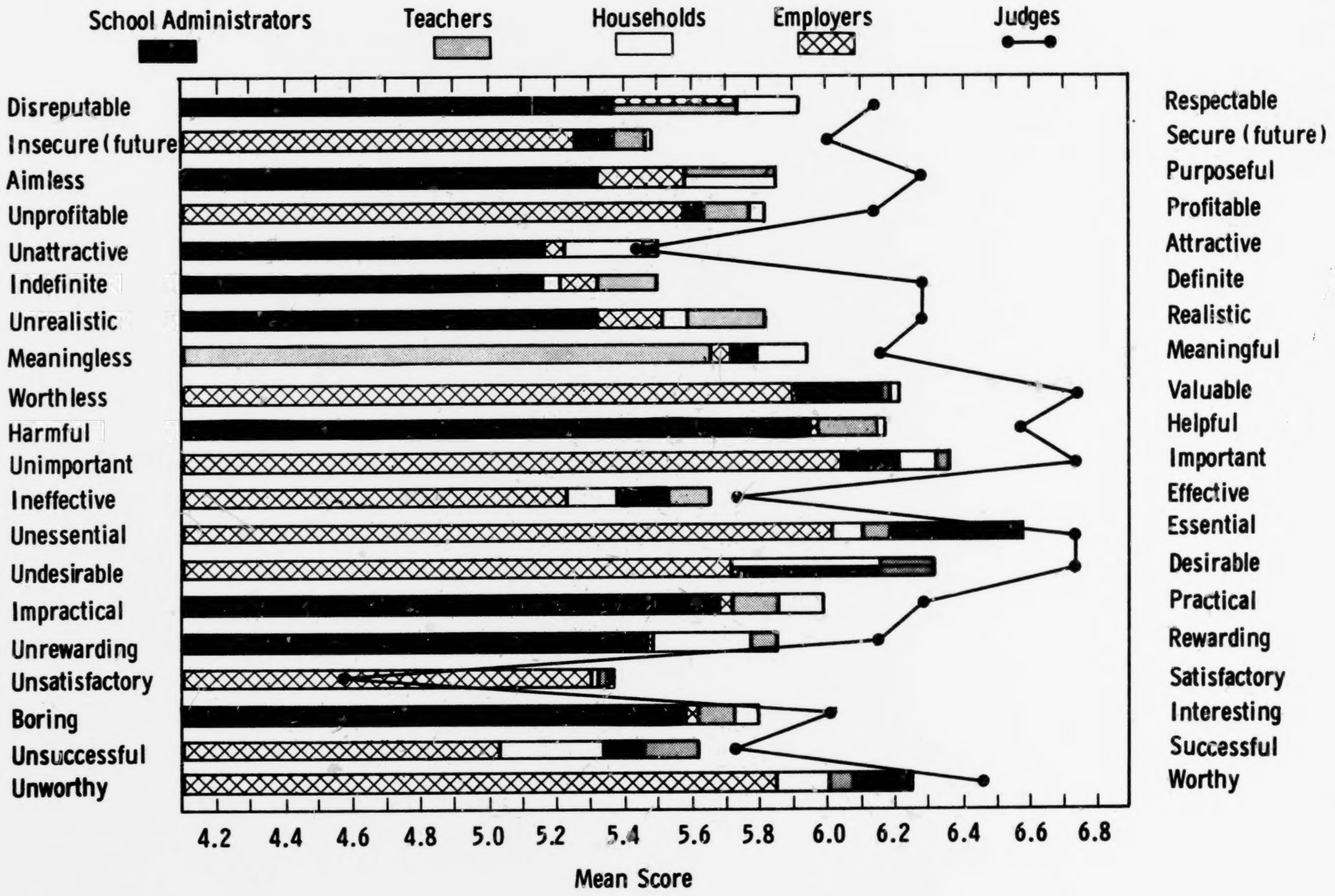


Figure 11. A Comparison Profile: Vocational education in high school as perceived by all groups.

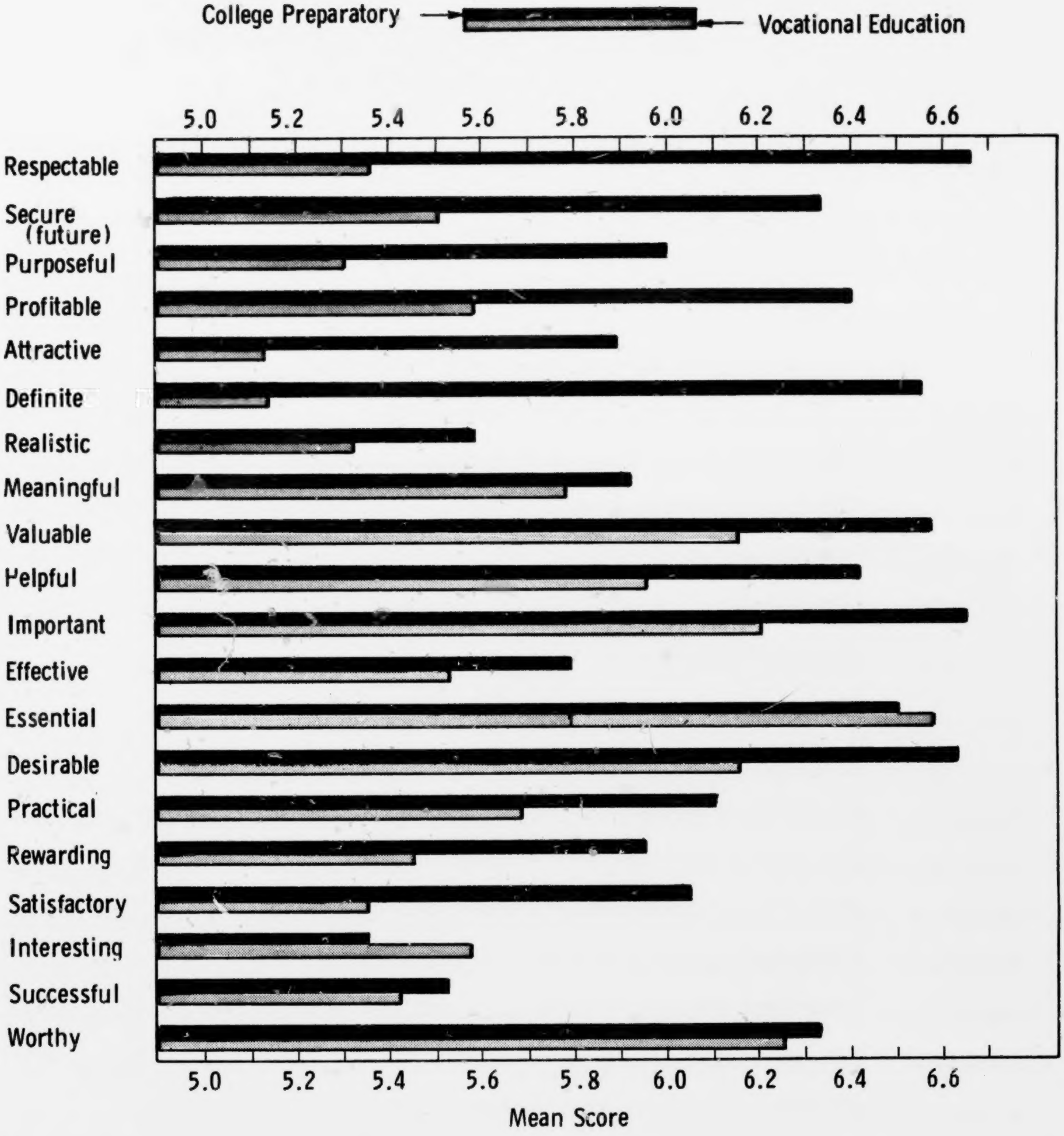


Figure 12. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by school administrators (N = 19).

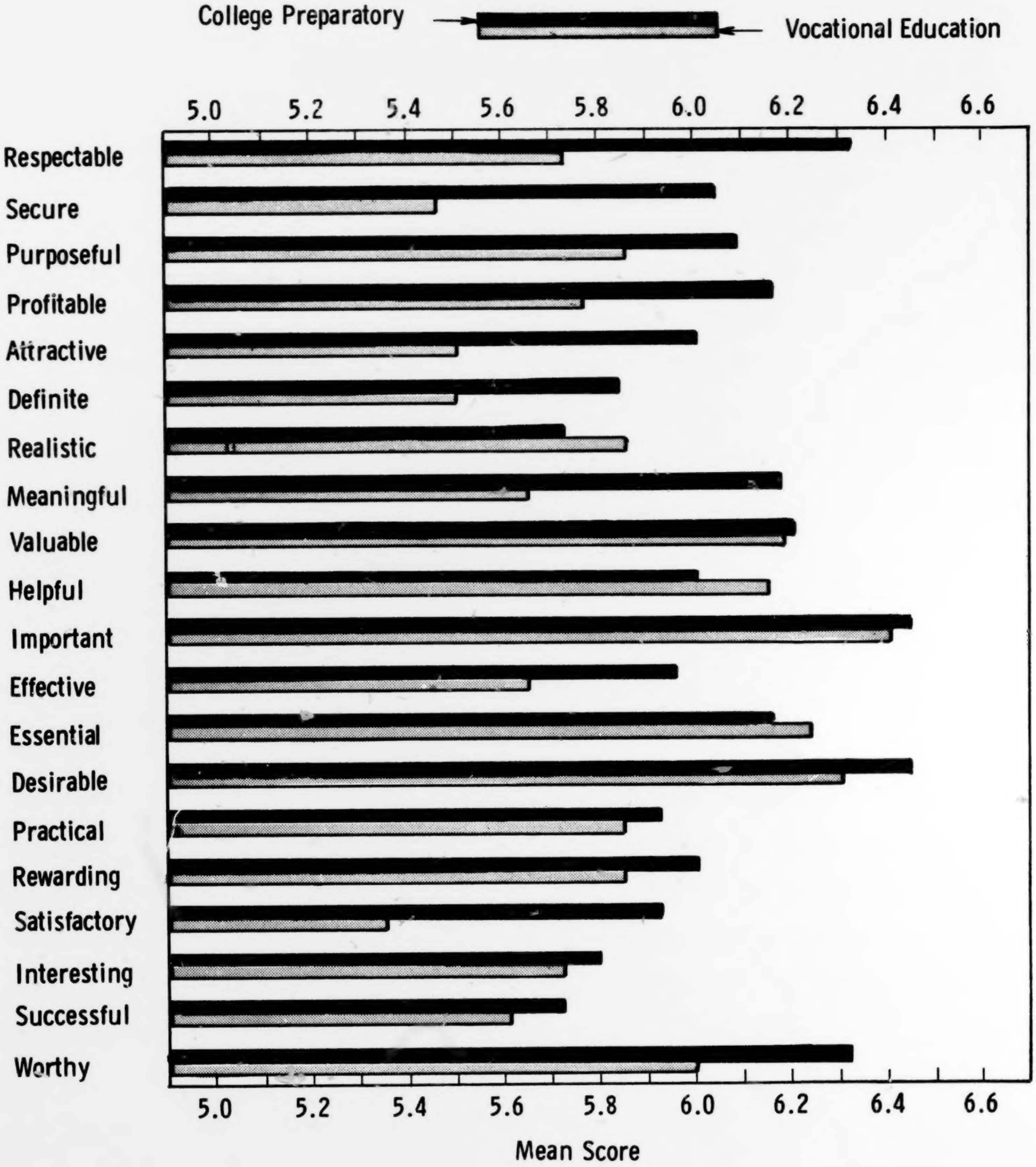


Figure 13. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by school teachers (N = 25).

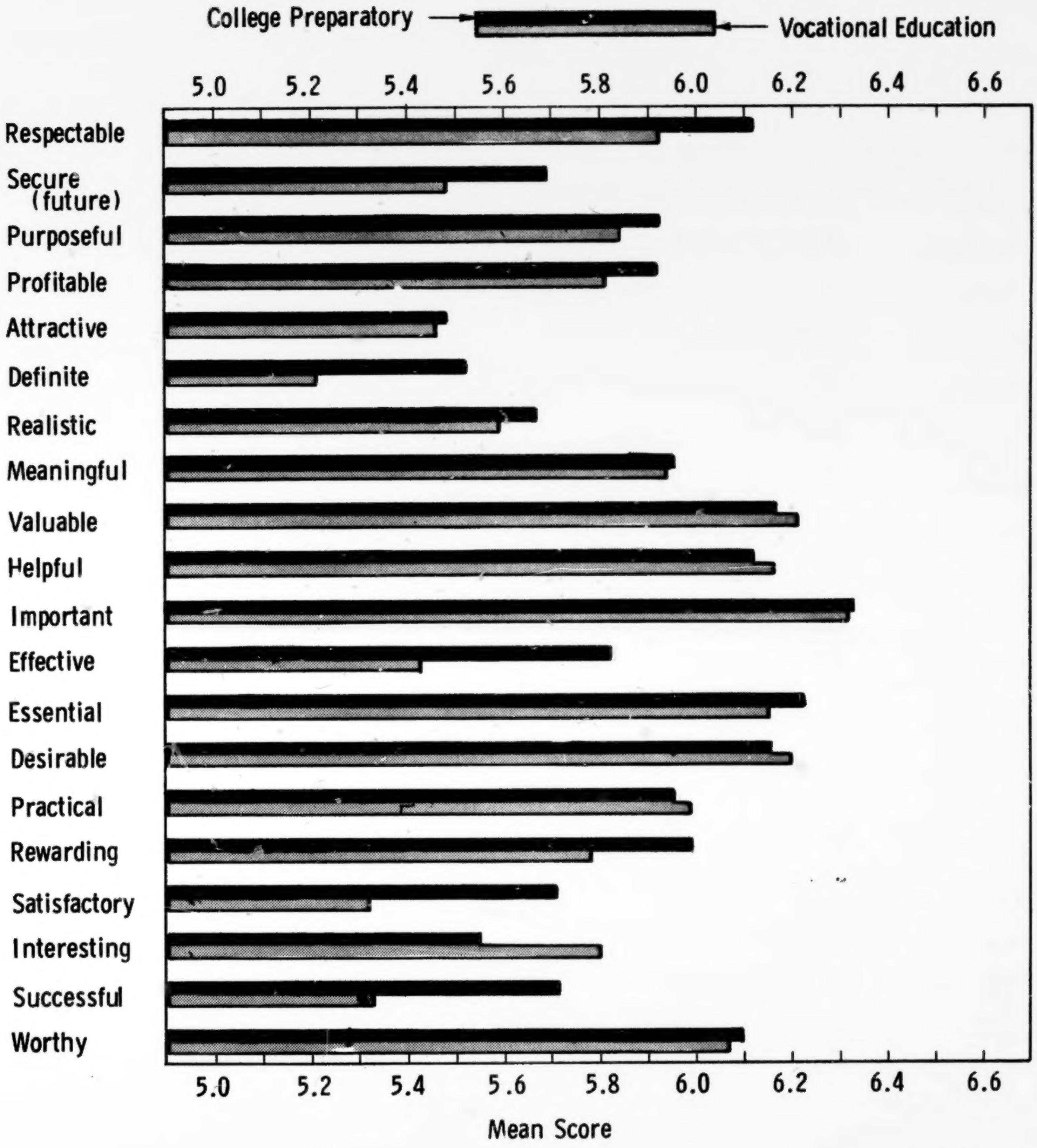


Figure 14. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by households (N = 155).

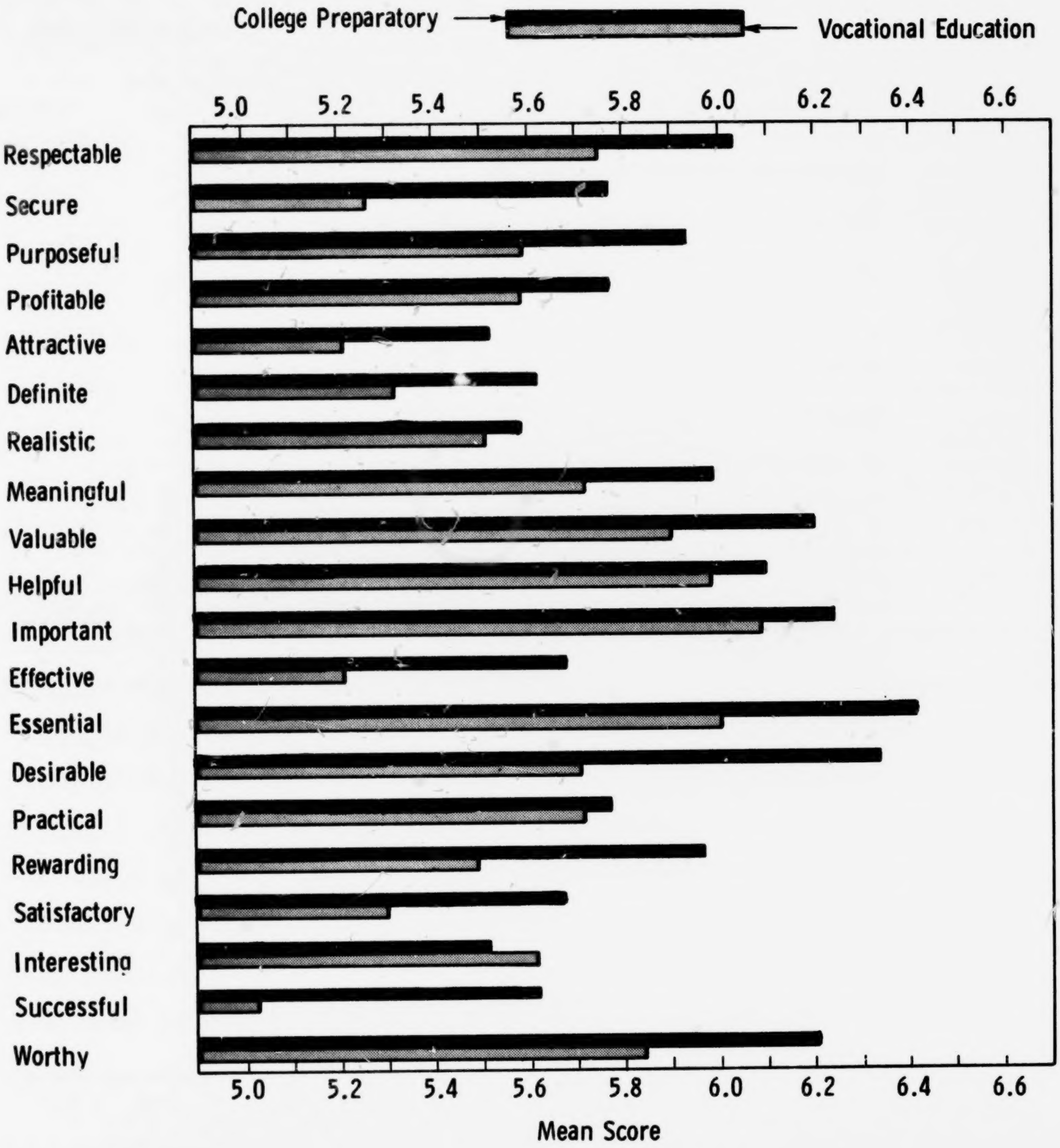


Figure 15. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by employers (N = 71).

college-preparatory program holds greater promise of security than the vocational, a point of view which households do not share (Figures 14 and 15).

Purposeful, Profitable, Valuable, Important, Practical

Teachers share with households a stronger feeling that the vocational program is purposeful than do employers and administrators, who score lower and lowest when compared in this manner (Figure 11). Employers are much less likely than households to perceive it as profitable. A similar explanation holds for the perception of the program as valuable. Teachers are more likely to ascribe importance to the vocational program, and households more than the other groups would describe it as practical. However, the school professionals, rather than the laymen, are more likely to rate the college-preparatory program the higher on many of the items contained in the scale (Figures 10 and 11).

In comparison with the college preparatory program administrators rate the vocational education program as less purposeful, profitable, valuable, and important. These are the respondents in the previous section who felt that the program needed expansion. A perception of the image of this nature admits of at least two interpretations: either the school professionals are inconsistent; or their greater acquaintance with vocational education permits them to be the more critical, which lowers their scores, and this is reflected in their responses to these subscales. Satisfactory—the problem becomes more involved upon consideration of the subscale satisfactory-unsatisfactory, there is little disagreement between the four groups that the program in vocational education is anything other than satisfactory. Employers indicate that, as a group, they are more likely to feel that college preparatory education is less satisfactory than they should like to have it, in contrast to the school professionals who are the more satisfied with it.

No group indicates that in comparison with the elder program the vocational program is more satisfactory. The school administrators find it the less satisfactory when so compared, which is consistent with their desire to improve the program as previously noted (Figure 11).

Definite

The vocational education program seems definite enough to the teachers and to the employers also, the only instance in which the latter feel more strongly about the program than any two of the other groups. Administrators, rather than the others, feel more emphatically that the college-preparatory program is definite. Households do not share this sentiment to the same degree, an intimation of the image which that program presents to the public (Figures 10 and 11).

If either program may be described as much more definite than the other, the school administrators would prefer to describe the college preparatory program in this manner. For that group the difference between both programs is especially pronounced (Figure 12).

Attractive

One can merely speculate what attraction the program has for teachers, while having less for administrators and employers. All three find college preparatory education the more attractive in comparison with vocational education then do the households which perceive little distinction between either on this dimension.

Meaningful

Teachers find the vocational program less meaningful than do the other groups while the college preparatory program holds more meaning for them. The opposite applies in part to households: for them more than others the vocational education program has meaning (Figure 11). Both programs are equally meaningful to school professionals, but households and employers see the vocational program as the less so (Figures 14 and 15).

Rewarding

There is scant difference between any of the groups as to how rewarding college preparatory education is, the gap between teachers and administrators widens when they are asked to evaluate how rewarding the vocational education program is: the former outscores the latter on this subscale (Figure 11). Consistent with their feeling that vocational education leads to a less secure future, that it is less valuable and profitable, employers perceive the vocational program as less rewarding than the college-preparatory (Figure 15).

Effective

The households and employers are less apt to consider the vocational program as effective. The employers are less likely to ascribe effectiveness to either program: whereas for the teachers the opposite holds true (Figures 11 and 12). The school professionals see no difference in effectiveness between both programs; but the laymen subordinate vocational education to the college-preparatory in effectiveness (Figures 14 and 15).

Successful

The school professionals feel more definitely that the vocational education program is successful than do the other two groups (Figure 12). Among all the groups the administrators question how successful the college preparatory program is (Figure 11). Households unite with employers in perceiving the program oriented to work as presently constituted as less successful than the college oriented (Figures 14 and 15).

School administrators and teachers see vocational education as a trifle more essential than the college preparatory course at the present time, the employers notwithstanding. Teachers do not feel that the vocational program is so interesting: they alone think the college program more interesting. After granting that they themselves do not find vocational education so interesting as others do, they do perceive it as a slightly more realistic program (Figures 11 and 12).

In summary the school administrators see vocational education as less respectable and as less clearly defined (Figure 12). Teachers question how satisfactory and meaningful it is (Figure 13). Parents perceive it as less effective, satisfactory, and successful (Figure 14). Employers do not believe it to be as desirable as the college preparatory program (Figure 15).

School administrators see vocational education as more interesting than the college preparatory program and at least as essential (Figure 12). Teachers also believe it to be as equally essential; in addition they perceive it to be more realistic and helpful (Figure 13). Households feel that it is at least as important, attractive, valuable, and meaningful as the college preparatory program (Figure 14). Employers hold the opinion that vocational education is as practical and as interesting as the other (Figure 15).

THE PANEL OF JUDGES

Seven members of the Centreville Vocational Education and Practical Arts staff, when invited to participate in the study, agreed to do so. Four additional individuals did not return mail questionnaires. The original task was to respond to the IVE as they thought either of two of the three populations might. In addition they were to submit a second questionnaire to represent their own personal opinions of the vocational education and college preparatory programs currently in operation in Centreville. The data presented here are based on the second requirement.

All seven of the judges belong to the industrial education division of the department. Three of the four judges who did not return their questionnaires have as their field of specialization, business education. The survey defined vocational education as including more than trade and industrial, which is a broader definition of the program than that given by the Centreville Vocational Education Department. However, the heart of the vocational education program in the Centreville schools is a program open to seniors entitled Cooperative Occupational Training which has three categories: distributive, office-secretarial, and trade-industry. The failure of several of the judges to reply could be attributable to chance; the probability though of getting a least one return from the business education staff is relatively high, even more so since one of the non-respondents is in the Cooperative Occupational Training Section; or explained by the surmise that these three were hewing strictly to the definition stated in that school's handbook of vocational education and that they were not certain whether they wished to be associated with a broader interpretation of vocational education. That the latter may not seem too conjectural, one might note that Business Education Office at The University of Michigan School of Education has its objectives and existence of its own apart from the Vocational Education Department, though the liaison and cooperation between them is excellent.

Thus the judges constitute a well-informed group of industrial educators from the Centreville school system itself. Each has taught his specialty for several years. Three have master's degrees. One has no degree listed. All have formerly taught at the older high school, but two are now at the newer one. The courses they teach are those defined as constituting the vocational education program. Since they also teach subjects which college-oriented students may elect for individual development under Industrial Arts, they are probably as aware of the advantages and disadvantages of the college preparatory program for all students, as anyone might be and may well be more perceptive about that program than many of their opposite numbers in the academic departments are about the vocational program.

(1) THE COLLEGE PREPARATORY PROGRAM AS PERCEIVED BY THE JUDGES

The scores obtained by the judges are more extreme due to the sample size. Had there been a larger sample, the scores might have moved closer to those obtained by the groups. The extreme scores should be taken for what they are.

The judges perceive this program as a program worthy of inclusion in the high school curriculum. They rate it as more *successful*, more *effective*, more *definite* than do the other groups. At the same time they share the latter's optimism as to the *practicality* and *importance* of such a program (Figure 10). Naturally enough they did't find it very *interesting* and they have considerable doubt as to the *future security* such a program brings (Figure 16).

(2) THE VOCATIONAL EDUCATION PROGRAM AS PERCEIVED BY THE JUDGES

Nearly all the obtained scores are higher than those of the other groups as was expected. It is interesting to note that they perceive the program as one as *definite* as the college preparatory, agreeing with the colleagues, the teachers, and disagreeing with the administrators. They concur with the householders that the vocational education program in Centreville can mean a *secure future*, hopefully not merely for themselves, but for anyone else who elects the program.

They are much more critical of the vocational program in contrast to the other groups. The program they feel is not as *satisfactory* and as *effective* as they would like. In addition they have some doubt as to the *attractiveness* of the program (Figure 11).

(3) CP-VE COMPARED

Both programs are *definite* and *worthy*. To the judges vocational education means a program that is much more *purposeful*, *profitable*, *realistic*,

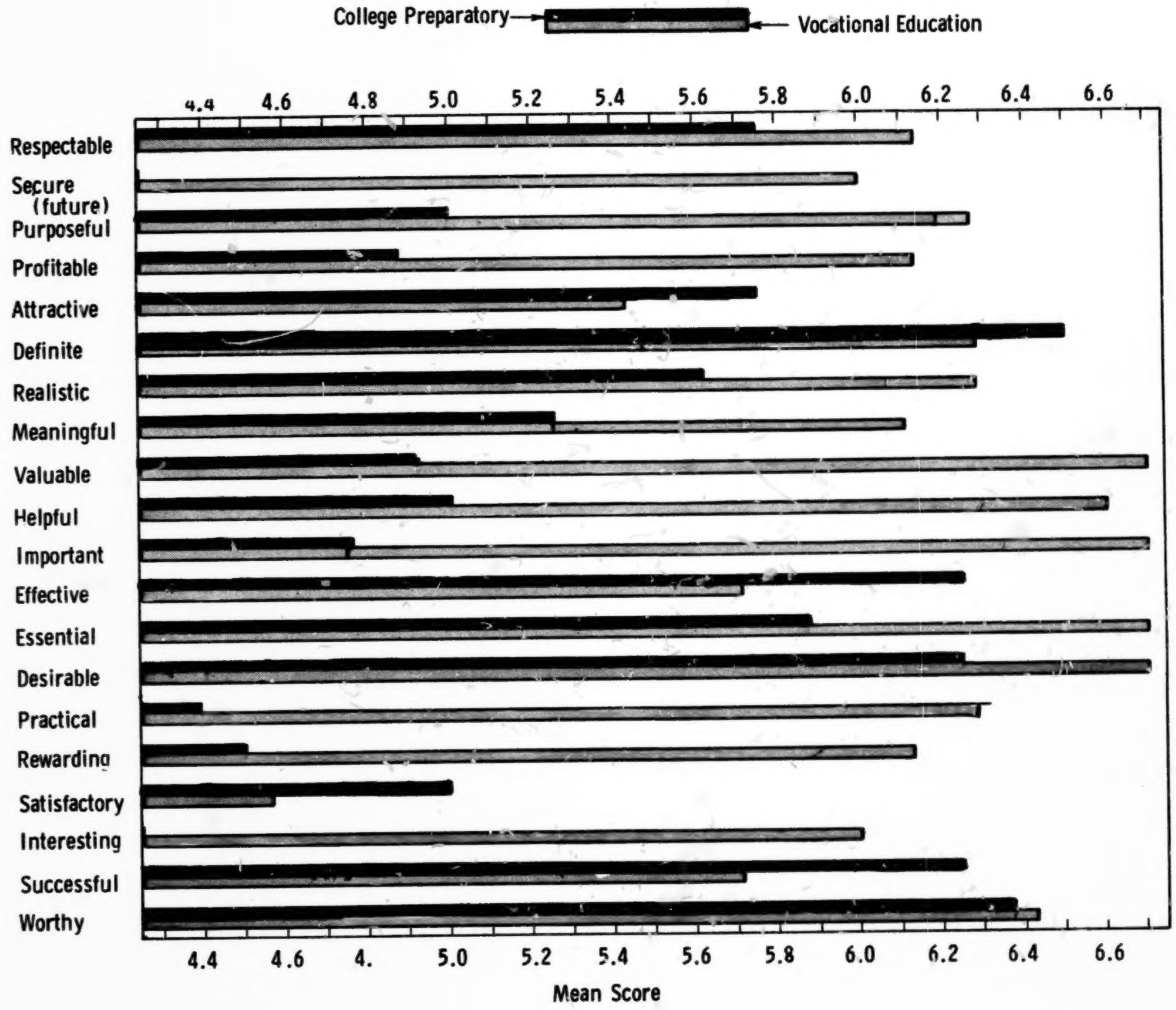


Figure 16. A Comparison Profile: College-preparatory education and vocational education in high school as perceived by judges (N = 7).

meaningful, valuable, helpful, important, essential, desirable, rewarding, and practical than is its college-oriented counterpart. Its shortcomings they realize, too. In direct comparison with the college-prep program, vocational education is less satisfactory and effective (Figure 16).

B. THE CONTEXT OF CENTREVILLE'S ATTITUDES TOWARD VOCATIONAL EDUCATION

1. Introduction

The initial section of the report has contained an exposition of the details associated with the development of the IVE as a reliable and valid measuring instrument, the principal objective of the study. The intended design of the Likert Scale in the instrument was such as to permit the determination of degrees of favorableness or unfavorableness in attitude towards vocational education in high school between selected groups of individuals. The following section concerns mainly the utilization of the Likert Scale in conjunction with excerpts from the data collected in the fall survey in an attempt to demarcate several of the elements which could conceivably influence the organization of an attitude.

(a) FOCUS OF THE ANALYSIS

An epidemiological approach characterizes a considerable portion of the analysis. The results of such an approach should reveal the existence of any important relationships between the affective content of an attitude and demographic characteristics, such as sex, age, income, educational and occupational status, years of residence in Centreville as well as several variables germane to the study such as personal experience with vocational education, personal acquaintance with students in theprogram, and amount of interaction with individuals acquainted with vocational education. This technique might possibly answer such questions as: Are males more favorable towards vocational education than females? What influence does higher income, or higher occupational status have over attitudes towards vocational education?

(b) METHODS

(1) The Interviewing Situation

To insure maximum compliance with the instructions outlined in the handbook and to supervise the field work the principle investigator established a field headquarters in Centreville in a private home. Though there are certain precautions that can optimize the interviewing and collection of data, there appears to be no operational way to separate good and bad interviewers (Moser, 1958). For such a short-term project as this a review of the interviews reveals a sufficient grasp of the fundamentals of interviewer techniques especially in the extent and clarity of the recorded answers. In one instance, however, it is evident that an interviewer consistently not only failed to exploit the situation, but also failed to obtain a reasonable answer to the original question. Each interviewer had ten interviews; some completed more, others less. The field work for the survey lasted slightly more than a month, 5 November - 15 December, 1963.

There were few problems encountered in the field. The proportion of people that refused to be interviewed consisted of about 10% of the sample contacted. Gurin et. al (1960) described this rate as not unusually high. The mail questionnaire did not obtain as high a percentage of response, since the refusal rate was predictably much higher (Table XIV).

TABLE XIV

RATE OF RETURNS SPRING SURVEY (IN PERCENT)

	Households	Employers	School Professionals
First two weeks	33	42	74
Third week	19	5	2
Fourth week	14	5	8
Final two weeks	11	8	6
Non-returns	23	40	10
	100	100	100

There were three forms of the questionnaire: one schedule for households, one for employers, and the last for school professionals. Some questions appeared in different places on all three; others were specific to the group interviewed.

(2) Coding

For each interview schedule, the staff compiled a coding pamphlet. The selection of possible categories of responses for each open-ended question depended upon an analysis of the replies obtained early in the survey. A clustering of similar responses permitted the formulation of rough categorizations for scoring. When nearly all the data had been collected and coded, the need to reformulate certain categories became evident, and this in some instances was done. The staff checked the work of the coders for accuracy and reliability. In order to make the demographic variables consistent across groups for analysis we collapsed some categories at the cost of some detail but the ensuing gain appeared to be adequate compensation for this procedure.

2. Favorability and Selected Demographic Characteristics of Respondents in Centreville

*There is no sharp division between men and women in their attitudes towards vocational education in high school.

*Older persons tend to be more unfavorable than younger persons.

*Younger respondents have had more personal experience with vocational education.

*Individuals classified as administrators and professionals are more unfavorable than individuals in other categories.

*Workers and administrators who have not had personal experience with vocational education are more highly favorable than other workers and administrators.

*Respondents with advanced degrees tend to be unfavorable toward vocational education in high school.

*Individuals who are acquainted with students in vocational education are more favorable than those who are not.

*Individuals with the least contact with persons in vocational education appear to be the least favorable.

Demographic variables permit the description of groups on the basis of certain characteristics which are enduring and in many ways relevant to an understanding of the functioning of attitudes. The groupings formed by means of the IVE scale facilitate the enumeration of the such factors as will indicate the nature of the perception of vocational education each holds.

Three of the common demographic categories are sex, income, and education. There are other variables that merit inclusion because of their special pertinence to the topic: age, occupational status, personal experience, acquaintance with a vocational student, and interaction with knowledgeable individuals.

Few of the relationships presented will show any significance. The numbers of respondents who did not reply make any unequivocal statements premature. At its best this type of analysis has made more manifest those relationships whose existence other investigators such as Schaefer (1962) and Mortimer (1956) had noticed and indicated as pertinent. In those cases where their relevance might be questioned tables have been omitted.

(a) SEX

The assessment of the attitudes of females towards vocational education in high school will have particular importance due to the larger number of women that will enter the labor force in the next decade. As Nosow (1963) points out, these will be women who had married and will subsequently take positions in the community. At this time the number of girls enrolled in vocational courses in the Centreville high schools is low in relation to the number who may work someday. Many take home economics courses. It would be most detrimental to solution of the problem of educating girls for careers if female respondents were hostile to the idea. Across all categories no sex difference appears prominent. The differences would indicate that women are more favorable. A few women employers are not so enthusiastic. One personnel director of a hotel employing many high school students in Centreville commented bitterly upon the quality of the girls she had to employ. "They had no training for a specific job, and didn't seem responsible or as dependable." She didn't think of vocational education in connection with girls (Table XV).*

TABLE XV

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND SEX OF RESPONDENT

		High	Moderate	Low
Households	Male	20	33	22
	Female	19	37	17
Employers	Male	16	30	14
	Female	1	3	3
School Professionals	Male	5	18	7
	Female	6	5	4

---

*All tables that follow, except where noted, are in number of individuals.

(b) AGE

One would expect a correlation between age and conservatism in older persons. The association of the low favorability with a conservative approach to a vocational education program appears to be an equally valid correlation from an analysis of the comments and data. The data-pattern gives some indication of such a trend, but one that is hardly conclusive (Table XVI).

TABLE XVI

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND AGE OF RESPONDENT

	High	Moderate	Low
Households			
40 and under	15	13	6
41-50	16	41	20
51-60	7	13	11
61 and over	1	0	1
Not Ascertained	--	3	1
Employers			
40 and under	5	13	4
41-50	6	9	7
51-60	6	7	6
61 and over	--	4	--
School Professionals			
40 and under	6	12	5
41-50	1	6	1
51-60	2	5	4
61 and over	2	--	1

Among households there are no important differences in the relationship between favorability and personal experience with vocational education. Both the high and low groupings split almost evenly. Among the employers, however, there are differences in the expected directions. Employers who have had experience are more favorable, where those who have not are less so (Table XVII). When the variable, age, is reintroduced as in Table XVIII, the trends in the data follow the expected patterns across all groupings with all respondents in each sample included. The proportion of individuals who admit to having no experience with vocational education and who are less favorable increases with age within the broad groupings.

TABLE XVII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND PERSONAL EXPERIENCE WITH VOCATIONAL EDUCATION (HOUSEHOLDS AND EMPLOYERS)

	Personal Experience	High	Moderate	Low
Households	Yes	15	28	16
	No	24	42	23
Employers	Yes	11	18	7
	No	6	15	10

TABLE XVIII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, AGE OF RESPONDENT, AND PERSONAL EXPERIENCE WITH VOCATIONAL EDUCATION (ALL GROUPS COMBINED)

	Personal Experience	
	Yes	No
High		
40 and under	16	10
41-50	11	12
51-60	5	10
61 and above	2	1
Moderate		
40 and under	20	18
41-50	24	32
51-60	12	13
61 and above	2	2
Not Ascertained	2	1
Low		
40 and under	10	5
41-50	11	17
51-60	9	12
61 and above	1	1
Not Ascertained	0	1

(c) INCOME

The data pattern for income could conceivably show a trend similar to that for age. The data is not consistent in this respect, though. The income bracket ($7,000-$9,999) has predominantly more highly favorable than less favorable individuals (Table XIX). A comparison of favorability, age, and income of the respondents reveals that a larger proportion of individuals with a family income within that range who are highly favorable also fall within the bracket for the youngest respondents (Table XX).

TABLE XIX

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND INCOME OF RESPONDENTS (HOUSEHOLDS AND SCHOOL PROFESSIONALS)

	High	Moderate	Low
Households			
Under $5,000	6	15	3
$ 5,000 - $ 6,999	7	6	9
$ 7,000 - $ 9,999	14	25	9
$10,000 - $14,999	8	17	13
$15,000 - $19,999	--	4	1
$20,000 and above	3	2	2
Not Ascertained	1	1	2
School Professionals			
Under $5,000	--	--	--
$ 5,000 - $ 6,999	1	1	0
$ 7,000 - $ 9,999	6	9	7
$10,000 - $14,999	4	6	3
$15,000 - $19,999	--	5	1
$20,000 and above	--	2	--

(d) OCCUPATIONAL STATUS

A man's present occupational status has important ramifications in the social order. It determines his acquaintances as well as friends and influences his living patterns outside his employment. The position confers status and provides opportunity to meet his needs in accordance with its requirements.

TABLE XX

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, AGE, AND INCOME OF RESPONDENTS (HOUSEHOLDS ONLY)

Age	Under $5,000	$5,000 - $6,999	$7,000 - $9,999	$10,000 - $14,999	$15,000 - $19,999	$20,000 and above	Not Ascertained
High							
40 and under	1	3	9	2	--	--	--
41-50	2	2	3	6	--	2	1
51-60	2	2	2	--	--	1	--
61 and over	1						
Moderate							
40 and under	4	1	8	--	--	--	
41-50	7	4	12	14	3	--	1
51-60	3	1	3	3	1	2	
61 and over	--						
Not ascertained	1		2				
Low							
40 and under	--	2	1	2	1		
41-50	1	2	5	9	--	2	1
51-60	1	5	2	2	--	--	1
61 and over	1	--	--	--	--	--	
Not ascertained			1				

Centreville is a city one of whose chief boasts is its number of small enterprises and self-made men. Its local industry supports with a diversity of materials one of the largest industries in the nation. One might expect that with such an industrial commitment the men who lead the workers would favor a program that could prove vital to its interests. At the same time one would normally expect higher officials to reflect the expectancies of their increased social status. An examination of Table XXI reveals that administrators and professionals are less favorable than workers.

TABLE XXI

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND OCCUPATIONAL STATUS OF RESPONDENT (HOUSEHOLDS)

	Degree of Favorability		
Occupational Status	High	Moderate	Low
Professionals	10	20	15
Administrator	6	16	11
Workers	21	30	11
Unemployed	1	3	2
Not Ascertained	1	1	

Personal Experience .

The introduction of the variable, personal experience (Table XXII), sheds some light on at least one circumstance that helped shape the attitude, the relative inexperience with vocational education of the professionals. Professional status requires intensive specialized training and consequently, lack of contact with vocational education programs. Among the administrators who are highly favorable fewer have had personal experience with vocational education than have the similar grouping for the less favorably disposed.

The table reveals in addition that respondents classified as workers, even though they had had no experience, were highly favorable to such an idea. It may represent on their part a belated wish for better training in their occupation or as one respondent wrote, "I wish I had the same opportunities in the years 1910-1916 that are offered nowadays."

(e) EDUCATION

Educational level is an additional facet of social status. It generally connotes an acute awareness of reality and a more profound background of

TABLE XXII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, OCCUPATIONAL STATUS OF RESPONDENTS, AND PERSONAL EXPERIENCE WITH VOCATIONAL EDUCATION (HOUSEHOLDS)

	Personal Experience	
Occupational Status	Yes	No
High		
Professional	3	3
Administrator	3	7
Worker	8	13
Unemployed	1	
Not Ascertained	1	
Moderate		
Professional	7	9
Administrator	7	13
Worker	13	17
Unemployed	1	2
Not Ascertained		1
Low		
Professional	2	9
Administrator	7	8
Worker	5	6
Unemployed	2	--

knowledge in certain areas than that possessed by the less-educated respondent. These areas do not always include topics or subjects with which one ordinarily comes in contact. The likelihood that the average well-educated respondent encounters in his work or conversation elements related to vocational education is slight. His attitude one might assume would be less favorable since he does know how advantageous the college program is. On the other hand one could expect more highly educated school professionals whose interests and experience relate to the curriculum to favor a program oriented to the needs of many students.

The tendency to equate unfavorability with increased educational status is evident in the data, though only mildly. The more highly educated employers are less favorable and unexpectedly so are the more highly educated school professionals. This same pattern also appears in the breakdown for households (Table XXIII).

TABLE XXIII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND EDUCATIONAL LEVELS OF RESPONDENTS

	High	Moderate	Low
Households			
High school and under	29	58	27
Some college, no degree	6	4	4
College degree	2	6	6
College, advanced degree	2	2	2
Employers			
High school and under	10	19	5
Some college, no degree	3	1	1
College degree	3	10	10
College, advanced degree	1	2	--
Not Ascertained	--	1	1
School Professionals			
College degree	5	6	3
College, advanced degree	6	17	8

For households and employers favorability appears to be related to acquaintance with a student who is in a vocational educational program. The differences between those who claim an acquaintance and those who do not is clearly in the expected direction (Table XXIV).

Table XXV (p. 78) analyzes this relationship further. Individuals are sorted in terms of their stated acquaintance and their level of education as well as their favorability. Those who admit to an acquaintance and have a high school degree are more highly favorable; those at the same educational level but who are not acquainted are more likely to be less favorable. This relationship does not seem to hold true for school professionals, however: they divide almost evenly on the three variables.

(f) INTERACTION

How individuals feel about vocational education could result from their acquaintance with individuals who have had some personal experience with it. Their perception of the image of vocational education could develop from

TABLE XXIV

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, AND ACQUAINTANCE WITH A STUDENT IN A VOCATIONAL EDUCATION PROGRAM

	High	Moderate	Low
Households			
Acquainted	25	38	15
Not Acquainted	13	32	24
Don't Know	1		
Employers			
Acquainted	13	16	8
Not Acquainted	3	16	9
Don't Know	1	1	
School Professionals			
Acquainted	10	19	9
Not Acquainted	1	4	1
Don't Know			1

occasions they have had to communicate with each other. The larger the circle of such acquaintances the more opportunities for exchange of opinions and beliefs, and for the development of impressions. Conversely as the number of acquaintances diminished, opportunities for interaction would diminish accordingly and the resulting perception could become more diffuse and unfavorable.

Table XXVI presents the data patterns for this group and for the others in terms of social interaction. A slight trend appears in the cells for all three groups. The staffs of the Centreville schools mingle quite fully which obscures their pattern somewhat. For all groups the trend is noticeable in the categories: less than half and few or none; the former who admit to larger circle of personal acquaintances are the more favorable.

A further breakdown (Table XXVII) indicates that there is a nucleus of individuals in the low favorability grouping which is virtually isolated from contact with any persons in vocational education. This cluster knows few or no individuals, and acquaintance with a student in the program is non-existent. The insertion of the variable, income (Table XXVIII) reveals that the nucleus divides over the categories, the largest number falling within the bracket ($10,000 - $14,999). Also interesting is the number of moderate respondents in the category few or none, who admit to little interaction with persons in vocational education.

TABLE XXV

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, ACQUAINTANCE WITH A STUDENT IN A VOCATIONAL EDUCATION PROGRAM, AND EDUCATIONAL LEVEL OF THE RESPONDENT

		High School Degree and Under	Some College, No Degree	College Degree	College, Advanced Degree
Households and Employers					
High	Acquainted	17	5	1	2
	Not Acquainted	7	4	0	0
	Don't Know	2		1	
Moderate	Acquainted	20	11	4	2
	Not Acquainted	19	10	2	1
	Don't Know	1			
Low	Acquainted	7	7	1	--
	Not Acquainted	14	3	4	2
	Don't Know	1			
School Professionals					
High	Acquainted	--	--	4	6
	Not Acquainted	--	--	1	--
Moderate	Acquainted	--	--	3	16
	Not Acquainted	--	--	3	1
Low	Acquainted	--	--	2	7
	Not Acquainted	--	--	1	--
	Don't Know				1

TABLE XXVI

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND EXTENT OF INTERACTION

	Degree of Favorability		
	High	Moderate	Low
Households			
Almost all	3	4	2
More than half	9	16	6
Less than half	10	9	7
Few or none	15	38	23
Not Ascertained	2	3	1
Employers			
Almost all	2	2	1
More than half	3	3	2
Less than half	8	11	4
Few or none	4	16	9
School Professionals			
Almost all	2	3	--
More than half	1	7	2
Less than half	3	9	5
Few or none	4	4	4
Not Ascertained	3	4	2

(g) SUMMARY

The most promising deduction from the study of the tables is that those individuals whose support for an improved vocational program would be necessary, because of their income level, educational level, occupational status have little knowledge of the program. As they are the individuals whose attitudes frequently depend on an adequate grasp of the situation, lack of information about the program is bound to affect their attitude of favorability.

3. Measures of Satisfaction and Awareness

Every individual, favorable or indifferent, more or less, to vocational education, lives in an environment that provides him with a wide range of stimulation. If he is attentive to those aspects which have some importance

TABLE XXVII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, ACQUAINTANCE WITH A STUDENT IN VOCATIONAL EDUCATION, AND EXTENT OF INTERACTION (HOUSEHOLDS)

Personal Acquaintance	Interactions Almost All	More Than Half	Less Than Half	Few or None	Not Ascertained
High					
Acquainted	3	7	4	10	1
Not Acquainted	--	2	5	5	1
Don't Know	--	--	1	--	--
Moderate					
Acquainted	2	11	4	19	2
Not Acquainted	2	5	5	19	1
Low					
Acquainted	--	5	3	6	1
Not Acquainted	2	1	4	17	--

for himself, over time he should become sensitive and alert to their manifestations. Employment opportunities and practices are important to everyone who has to earn his living or has to ensure that a relative will be able to obtain employment in a suitable occupation.

The status of vocational education in a community frequently depends on the employment needs prevalent at a certain period. Continuation schools served a valuable function during the decade following World War I until the depression rendered such a community service useless. In those areas or at those times when there is little need for concern about training youth for employment, the quality of vocational programs reflect this indifference.

There are trends operating in society which will have considerable significance to individuals and for the quality of vocational education programs in the next decade. This section investigates the extent of awareness of these trends and satisfaction with the present arrangements in schools to cope with them. Such an investigation seeks to determine the framework within which the attitude of favorableness or unfavorableness functions.

TABLE XXVIII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, EXTENT OF INTERACTION, AND INCOME (HOUSEHOLDS)

Interactions	Income						
	Under $5,000	$5,000 - $6,999	$7,000 - $9,999	$10,000 - $14,999	$15,000 - $19,999	$20,000 and Above	Not Ascertained
High							
Almost all	--	1	2	--	--	--	
More than half	1	3	3	2	--	--	
Less than half	--	--	4	4	--	1	1
Few or none	3	3	5	2	--	2	
Not Ascertained	2						
Moderate							
Almost all	1	--	2	1	--	--	
More than half	2	--	7	4	2	1	
Less than half	1	3	2	3	--	--	
Few or none	9	2	14	9	2	1	1
Not Ascertained	2	1					
Low							
Almost all	1	--	1	--	--	--	
More than half	--	2	1	3	--	--	
Less than half	--	2	2	2	--	1	
Few or none	2	4	5	8	1	1	2
Not Ascertained		1					

(a) THE EXISTENCE OF TRENDS

Statisticians can make predictions about the future varied enough to suit the taste of the most optimistic or pessimistic individual. Regardless of individual preferences as to the rate of acceleration, there is little reason to doubt that the trends currently operative in the economy will continue in a positive direction.

Current statistics indicate that the labor force will consist of increasing numbers of younger workers. The youthful population (between the ages of 19 and 24) in Michigan alone will increase between 1960 and 1970 more than a half million, or more than 55%. On the assumption that they will participate in the labor force for the same rate as they do now, there will be an increase in this force of at least 275,000 youthful workers (Nosow, 1963).

The second major trend about whose continuance there is little uncertainty is that for the last few decades the fastest growing major occupational group has been that of professional, technical and kindred workers. Their employment increased four times as fast as total employment. This gradual transformation in the nature of technology and the changing composition of American industry will continue to raise employment requirements and diminish the need for the unskilled.

The unemployment rates among the young reflect these trends. The conjunction of increased numbers of youths entering the labor market, a constant growth in the economy, and an increase in white-collar opportunities accompained by a proportionate decline in the blue-collar fields, has produced the largest rise among the unemployed in the age bracket 18-24.

Centreville differs little from other cities in the industrial complex girding lower Michigan. The trends predicted on the state and national level could presumably be operative at the community level. For this reason the interview schedule included questions designed to investigate how individuals assessed the present situation and the hypothetical Centreville ten years hence. They sought to ascertain opinions as to the existence of unemployment problems, as to the nature of the anticipated transformation in kinds of job opportunities and as to the numbers of youths available to fill them. Certain additional questions delved into the respondent's satisfaction with current local educational practices at the high-school level in terms of comparability of programs and allotment of funds.

(b) AWARENESS

Summary

*Respondents who are highly favorable to vocational education are more likely to believe that there is an unemployment problem than those who are low in favorability.

The majority of respondents contacted in the study had lived in Jackson twenty years or more. Their extensive length of residence permits the supposition that they are generally well-acquainted with the community (Table XXIX).

TABLE XXIX

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND YEARS OF RESIDENCE IN CENTREVILLE

Years of Residence	Degree of Favorability		
	High	Moderate	Low
Households			
Under one year	2	1	--
One to four	2	4	4
Five to nine	6	5	3
Ten to nineteen	9	20	10
Twenty or more	20	40	22
Employers			
Under one year	1	1	
One to four	3	2	2
Five to nine	1	1	1
Ten to nineteen	5	8	3
Twenty or more	6	19	11
Not Ascertained	1	2	--

On the national level there is an unemployment problem among youth, age 18-24. In Centreville the intent was not to determine whether such a problem existed locally, but rather to ascertain whether respondents believed that this condition existed in Centreville. As Table XXX indicates more individuals who scored high in favorability toward vocational education tended to believe there was such a problem, whereas the opposites belief prevailed for those low in favorability. School professionals divided evenly on the question.

If there appears to be an unemployment problem among youth today, the probability would be that, given the conditions widespread at this time, the number of youth available for work ten years hence would serve to intensify the problem. The interviewers asked for an estimate as to the number of

TABLE XXX

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND BELIEF IN THE EXISTENCE OF AN UNEMPLOYMENT PROBLEM AMONG CENTREVILLE'S RECENT HIGH SCHOOL GRADUATES

	Belief in Problem	Degree of Favorability		
		High	Moderate	Low
Households	Yes	34	52	23
	No	2	6	7
	Don't Know	3	12	9
Employers	Yes	15	28	10
	No	--	1	3
	Don't Know	2	4	4
School Professionals	Yes	8	16	8
	No	1	2	1
	Don't Know	2	5	2
All Groups	Yes	57	96	41
	No	3	9	11
	Don't Know	7	21	15

youth who would be available for employment in a decade. The hypothesis was that more highly favorable individuals would select the larger estimates. This did not prove to be the case (Table XXXI). For all groups combined there were more extreme estimates for the highly favorable, but there is no consistency in the trend.

Another question sought to determine whether the job situation that the youth of the future will face ten years hence will bear a close resemblance to the present situation or will be different. Most individuals believed that the kinds of job opportunities would change, although there were more in the low favorability grouping among households who predicted that there would not be many extensive changes. However, more of the school professionals who were low in favorability predicted changes than did the more highly favorable (Table XXXII).

When asked to specify what kinds of changes they had in mind there was no difference between clusters of respondents in terms of favorability. Some

TABLE XXXI

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND ESTIMATES OF NUMBER OF YOUTH SEEKING EMPLOYMENT TEN YEARS HENCE

	Degree of Favorability		
	High	Moderate	Low
Households			
A lot more	22	40	19
Quite a few more	2	6	6
Just a few more	5	4	3
About the same as now	6	11	7
Fewer	4	7	2
Don't Know	--	2	2
Employers			
A lot more	7	15	9
Quite a few more	5	14	6
Just a few more	2	1	1
About the same as now	2	2	--
Fewer	1	1	--
Don't Know	--	--	1
School Professionals			
A lot more	8	11	4
Quite a few more	1	1	2
Just a few more	--	--	1
About the same as now	2	8	4
Fewer	--	2	--
Don't Know	--	1	--
All Groups			
A lot more	37	66	32
Quite a few more	8	21	14
Just a few more	7	5	5
About the same as now	10	21	11
Fewer	5	10	2
Don't Know	--	3	3

TABLE XXXII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND PREDICTION OF CHANGES IN KINDS OF JOB OPPORTUNITIES

	Prediction of Changes	Degree of Favorability		
		High	Moderate	Low
Households	Yes	25	45	24
	No	8	17	12
	Don't Know	6	8	3
Employers	Yes	13	24	9
	No	4	7	4
	Don't Know	--	2	4
School Professionals	Yes	4	16	8
	No	3	6	1
	Don't Know	4	1	2

cited technological change as an important factor in the years to come: others stressed the need for specialized labor and the need for a supply of skilled workers. There was also a feeling that there would be fewer unskilled jobs available in the future (Table XXXIII).

In brief the respondents seem to be alert to the significant changes at work in their community. They did not differ much from the expected in terms of awareness.

(c) SATISFACTION

Summary

*A majority of respondents estimated the persentage enrolled in college oriented programs as less than 50%. The official estimate lies between 61-70%.

*Respondents who scored low in favorability were more likely to believe their estimate of number of students enrolled appropriate for the community than those high in favorability to vocational education.

*Those low in favorability who believed that both programs were comparable were satisfied with the present use of school funds; those high in favorability who thought them not comparable were dissatisfied with the use of funds.

TABLE XXXIII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND ESTIMATED KINDS OF CHANGES IN JOB OPPORTUNITIES

	High	Moderate	Low
Emphasis on growth, development, change for the better	0	4	2
Emphasis on more advanced technology	16	24	17
Emphasis on need for more specialized training and skilled labor	12	22	16
Emphasis on fewer unskilled jobs	5	12	4
Emphasis on need, different, new, or more varied kinds of employment	2	10	1
Other	32	54	27

The initial step in determining how satisfied the respondents were with the current state of affairs was to gain some insight into what they believed to be the state of the curriculum at their high schools. The respondents were asked to estimate what percentage of the student population was in a program oriented towards college. The hypothesis was that those more favorable to vocational education would overestimate the offical percentage circulated. This did not prove to be the case. A large majority of the respondents however, estimated the percentage at less than 50% or less than half of the students in the high school. The figure officially estimated lies between 61% and 70%. More of the households high in favorability toward vocational education estimated the percentage at less than 50%. Among the school professionals those individuals who were less favorable to vocational education did underestimate the number of students enrolled in college-oriented programs (Table XXXIV).

One might expect the respondents lower in favorability to vocational education to believe that the estimate they had just given to be appropriate for a community of this type. The data supports this expectation within both the household and school professional groups (Table XXXV). The recombination of both the tables of the households discloses that more of those high in favorability to vocational education were less satisfied with the appropriateness of their estimate than were those low in favorability, who felt the percentage to be quite appropriate (Table XXXVI).

TABLE XXXIV

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND ESTIMATES OF NUMBER OF STUDENTS ENROLLED IN THE COLLEGE PREPARATORY PROGRAM (HOUSEHOLDS AND SCHOOL PROFESSIONALS)

	Estimated Percentage	Degree of Favorability		
		High	Moderate	Low
Households	0 - 50	24	33	19
	51 - 70	3	7	3
	71 - 100	3	6	3
	Don't Know	9	24	14
School Professionals	0 - 50	2	8	7
	51 - 70	3	7	2
	71 - 100	2	3	--
	Don't Know	4	5	2
Both Groups	0 - 50	26	41	26
	51 - 70	6	14	5
	71 - 100	5	9	3
	Don't Know	13	29	16
Official Estimate:	61 - 70			

TABLE XXXV

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND APPROPRIATENESS OF PERCENTAGE

	Appropriateness of Percentage	Degree of Favorability		
		High	Moderate	Low
Households	Appropriate	9	29	13
	Inappropriate	17	13	6
	Other	13	28	20
School Professionals	Appropriate	4	10	8
	Inappropriatene	4	6	--
	Other	3	7	3

TABLE XXXVI

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, ESTIMATE OF PERCENTAGE IN PROGRAM, AND APPROPRIATENESS OF PERCENTAGE (HOUSEHOLDS)

	Appropriatness of Percentage		
	Appropriate	Inappropriate	Not Ascertained
High			
50 and below	8	12	4
51 - 70	1	2	--
71 and above	--	3	--
Not Ascertained	--	--	9
Moderate			
50 and below	21	7	5
51 - 70	5	2	--
71 and above	2	4	--
Not Ascertained	--	--	23
Low			
50 and below	9	4	6
51 - 70	1	1	1
71 and above	--	--	14
Not Ascertained	3	1	--

Among the questions asked the respondents was one concerning the comparability at the high school level of programs for students enrolled in vocational and in college preparatory programs. More of those high in favorability to vocational education felt that the two programs were not comparable in quality and facilities. A slight majority felt that the programs were comparable; among the less favorable more respondents chose the category don't know (Table XXXVII). Subsequently, feelings of how appropriate the percentage of students enrolled in a college oriented program were checked against feelings of comparability of the two programs. Most of those who felt the percentage inappropriate for the community did not believe the two programs to be comparable; whereas a majority of those who felt that the percentage they had estimated was appropriate also considered the programs to be comparable (Table XXXVIII). The interplay of favorability, comparability of programs, estimated percentage of students in the program, and the stated appropriateness of the percentage distinguishes two grouping of individuals, one satisfied with the status quo and the other dissatisified, with the former lower in favorability toward vocational education than the latter.

TABLE XXXVII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND BELIEF IN COMPARABILITY OF COLLEGE PREPARATORY AND VOCATIONAL EDUCATION PROGRAMS (HOUSEHOLDS)

Belief in Comparability of Program	Degree of Favorability		
	High	Moderate	Low
Yes	19	31	17
No	16	20	8
Don't Know	4	19	14

TABLE XXXVIII

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, COMPARABILITY OF PROGRAMS, AND APPROPRIATENESS OF PERCENTAGE IN COLLEGE PREPARATORY PROGRAM

Comparability of Program	Appropriateness of Percentage		
	Appropriate	Inappropriate	Don't Know
High			
Yes	6	7	6
No	2	9	5
Don't Know	1	1	2
Moderate			
Yes	14	6	11
No	10	5	5
Don't Know	5	2	12
Low			
Yes	7	1	9
No	3	2	3
Don't Know	3	3	8

The final measure sought to determine how satisfied the respondents were with the effectiveness of the school's use of funds. High schools in Michigan receive reimbursement from state and national funds for the all-day vocational program. A study by Wenrich (1963) on the effects of discontinuation of the extra-local funds revealed that for the most part were such action taken the programs would continue in effect unaltered. This would indicate that schools do provide a proportionate share of local funds to support vocational programs.

The schedules asked the groups to comment, in terms of satisfaction, upon the utilization of school funds in the community. More of the low favorability respondents were satisfied with the use of school funds than were those high in favorability. This pattern holds true for all groups (Table XXXIX).

TABLE XXXIX

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY AND SATISFACTION WITH USE OF PRESENT FUNDS

Statement of Satisfaction	Degree of Favorability		
	High	Moderate	Low
Households			
Yes	20	45	25
No	15	13	6
Don't Know	4	11	8
Employers			
Yes	3	21	13
No	13	8	2
Don't Know	1	4	2
School Professionals			
Yes	7	12	10
No	3	9	1
Don't Know	1	1	--
Combined Groups			
Yes	30	78	48
No	31	30	9
Don't Know	6	16	10

Most respondents believe themselves to be satisfied that the programs are comparable, and that the funds are distributed equitably. Among those high in favorability there are several individuals displeased with the use of funds, and who deny the programs are comparable (Table XL).

TABLE XL

RELATIONSHIP BETWEEN DEGREE OF FAVORABILITY, ESTIMATES OF COMPARABILITY OF PROGRAMS AND SATISFACTION WITH USE OF PRESENT FUNDS (HOUSEHOLDS, SCHOOL TEACHERS)

Estimates of Comparability	Statement of Satisfaction		
	Yes	No	Don't Know
High			
Yes	20	4	3
No	5	9	2
Don't Know	3	2	--
Moderate			
Yes	38	9	11
No	9	10	5
Don't Know	6	4	5
Low			
Yes	23	1	11
No	3	3	1
Don't Know	2	4	--

4. The Student and His Future Plans

The professional leaders of education in the American high school face a troublesome dilemma. They are aware that less than half of the students at secondary levels will eventually attend college and that these students need an intensive program of studies; equally important they realize is the provision of meaningful educational experiences for the remaining pupils, but that generally such effort must take place within a conceptualization of the high school more suitable for the college oriented program. If they try to modify the purposes of the high school to suit all the students, they encounter a social pressure which indiscriminately stresses the need for youth to attend college; if they concentrate on intensifying the quality of educational experience for some students and offer a diluted version of the same program for others, they encourage mediocrity and abet the frustrated student's desire to drop out of school prematurely.

Research from the SRC (Withey, 1960) has indicated that at the minimum one-third of the parents they interviewed believed their children would go on to college. Many of those interviewed were parents of children still in elementary school. Other surveys estimate this percentage at 47%, of whom 51% live in urban communities such as Centreville. Even though job-upgrading, and the economic capabilities of families have improved, it would be difficult to estimate how much these have contributed to the increase in pressure to obtain higher education. Family expectancies, the extent of income, and educational level, and influence of friends of the family are all possible contributors to the forces directing youth towards college.

It is in this milieu of pressures from home, school, and friends that the student makes his decision as to which program to elect. The household interview schedule focused on this crucial point in the educational program and strove to describe it. Since the prevailing attitude of the parent would concern itself generally with the decision to go to college, the questions in the schedule probed the variables that could have contributed to the decision.

Summary

*Few households reported difficulty in deciding upon a program of study for the eleventh grade.

*Most parents are satisfied that the course of studies in which their child is enrolled will prove helpful to his vocational plans.

*Many students who have not made any career plans intend to continue in school.

Six out of ten parents felt that their eleventh-grade offspring planned to attend college; two of the ten knew their children were not going, and another two did not know (Table XLI, Item 1). Of those who answered negatively about attendance at college, most were indefinite about going to work (Table XLI, Item 2).

Most students appeared to be satisfied with their program in November; very few had had much difficulty about choosing a program, most of which centered around scheduling problems or inability to take a special course (Table XLI, Item 3).

In this sample a minority of parents felt that their family had any expectancies about which occupations or career the eleventh grader will follow in life (Table XLI, Item 4). Nearly half the students had indefinite or

TABLE XLI

A SUMMARY OF VARIABLES RELATED TO CAREER PLANS

Households	Yes	No	Don't Know	Not Ascertained
Items				
1. Is your eleventh grader planning to continue school full-time after graduation?	96	24	28	--
2. Is your eleventh grader planning to work full-time after graduation?	18	8	16	106
3. Was there any difficulty about deciding which program to elect?	19	63	23	43
4. Does your family expect this student to follow a certain occupation or career in life? (career plans)	22	121	5	--
5. How definite did your eleventh grader's plans seem to be?				
1. Definite	31	--	--	--
2. General	--	67	--	--
3. Indefinite or Other	--	--	50	--
6. Has your eleventh grader had any part-time job related to his vocational plans?	26	120	1	1
7. Will your family be able to help your eleventh grader by means other than financial?	42	85	14	7
8. Has your eleventh grader received any such advice outside the home? Where?				
1. School 76				
2. Church 10				
3. Other 5				

9. In terms of vocational goals how helpful would you consider the courses of study your eleventh grader has elected?		High	Moderate	Low
	Helpful	36	61	30
	Neither	1	6	4
	Unhelpful	--	3	3
	Don't Know	2	--	2

general plans about his occupation or career (Table XLI, Item 5).

A part-time job which is related to the desired occupation is often related to the definiteness of the vocational plans. About one-seventh were reported as having such jobs (Table XLI, Item 6).

Nearly one-third of the households could give assistance other than advice or financial support in helping their sons or daughters secure fulltime employment. The purpose of this question was to investigate what resources families have for helping their children obtain employment (Table XLI, Item 7). There are some employers who hire young people on the recommendation of a parent or relative employed at the enterprise.

Many respondents believed that their eleventh grader received helpful advice about careers outside the home. Nearly three-fourths of the advice came from school sources. The church was the other source most frequently cited (Table XLI, Item 8).

Most parents indicated that the present course of study their child is pursuing is helpful toward his vocational goals. Those who scored highly favorable toward vocational education were more likely to feel that the program their child followed was more helpful than were those who scored low (Table XLI, Item 9). In this instance there was a slight trend towards a feeling of indecision or negativism among those low in favorability.

The existence of definite plans limits the choice of alternatives available to individuals. We examined replies to questions in terms of definite, general, and indefinite plans (Table XLII). More individuals who were definite in their plans had assurances of family assistance and had part-time jobs related to a possible career than did many of the others. Many of those whose plans as known to the parent seemed general had received no pressure from the family to follow a certain career; family assistance would be limited to financial assistance; they had had no part-time jobs, but had received counseling in relation to a career. Their present electives were considered quite helpful to their vocational plans.

Those students who have career plans intend to continue school, just as some of those who have made no such plans will not continue. There is a large group which has not made any definite plans about a career or occupation that nevertheless may continue. Possibly the eleventh-grade is still too early to think about a career especially as it may be possible to defer such a decision. Others may simply plan to marry. There is another group which is neither sure of any occupational plans nor decided about continuing school (Table XLIII).

TABLE XLII

RELATIONSHIP OF DEFINITENESS OF PLANS AND VARIABLES RELATED TO CAREER PLANS

	State of Plans		
	Definite	General	Indefinite or Other
Intent to Continue School			
Yes	25	44	27
No	2	11	11
Don't Know	4	12	12
Not Ascertained			2
Intent to go to Work			
Yes	1	8	9
No	4	3	1
Don't Know	0	7	9
Not Applicable	26	49	31
Existence of Career Plan			
Yes	7	9	6
No	23	56	42
Don't Know	1	2	2
Family Assistance in a Career			
Yes	8	19	15
No	17	44	24
Don't Know	6	4	11
Part-Time Jobs Related to a Career			
Yes	6	11	9
No	25	56	39
Don't Know	0	0	2
Counseling in Relation to a Career			
Yes	23	41	26
No	7	21	17
Don't Know	1	5	7
Helpfulness of Present Electives			
Helpful	30	59	38
Neither	1	4	6
Unhelpful	0	3	3
Don't Know	0	1	3

TABLE XLIII

RELATIONSHIP BETWEEN EXISTENCE OF CAREER PLANS, AND INTENT TO CONTINUE SCHOOL

	Intent to Continue School		
	Yes	No	Don't Know
Existence of Career Plans			
Yes	16	2	4
No	76	21	24
Don't Know	4	1	--

There appears to be no relationship between how definite one's plans are, whether he intends to continue school, and the family income. A possible hypothesis was that the higher the income, the more definite the plans, and the intent to continue affirmative. This did not prove to be the case. Income did not prove to be important, although many of the cases clustered around the lower categories in the general and indefinite groupings (Table XLIV).

Those for whom the family has expectancies were students with above average incomes (Table XLV). The majority who have no family expectancies about careers to influence them appear to have sufficient income to make a decision at a later date.

Therefore it seems reasonable to assume that in the Centreville junior class most of the students aspire to college. Most are not sure about what they want to do there; but presumably, as their education increases, they will eventually find the career that best suits them. Most of the juniors can expect considerable support, financial or otherwise, from their families.

Any expansion of the vocational program in Centreville should come at a level where it is assured of the greater popular and financial support. A committee of Centreville professionals and citizens has evolved a plan to establish an area vocational-technical center which would serve the school districts of that county. In view of the results of this survey such a plan seems to be a feasible one, which would receive greater support than an expansion at the level of the individual school district provided that the local high school take steps to provide a meaningful basic education for those students who will be attend it on a part-time basis. It should clarify the basic aims of vocational education, and dispel much of the vagueness which currently clouds the image of the program.

TABLE XLIV

RELATIONSHIP BETWEEN DEFINITENESS OF STUDENT'S PLANS, INTENT TO CONTINUE SCHOOL, AND INCOME OF RESPONDENT

		Income						
		Under $5,000	$5,000 - $6,999	$7,000 - $9,999	$10,000 - $14,999	$15,000 - $19,999	$20,000 and Above	Not Ascertained
Definiteness Of Plans	Intent to Continue							
Definite	Yes	4	5	6	9	--	--	1
	No	--	--	2		--	--	--
	Don't Know				1	1	1	1
General	Yes	5	6	13	13	2	4	1
	No	4	--	5	2	--	--	--
	Don't Know	2	3	3	3	--	--	1
Indefinite or Other	Yes	4	2	7	10	2	2	--
	No	2	3	6	--	--	--	
	Don't Know	4	3	3	2	--	--	--

TABLE XLV

RELATIONSHIP BETWEEN EXISTENCE OF CAREER PLANS, INTENT TO CONTINUE SCHOOL, AND INCOME OF STUDENT'S FAMILY

		Income						
		Under $5,000	$5,000 - $6,999	$7,000 - $9,999	$10,000 - $14,999	$15,000 - $19,999	$20,000 and Above	Not Ascertained
Existence of Career Plans	Intent to Continue							
Yes	Yes	4	1	4	6	--	1	--
	No	--	2	--	--	--	--	--
	Don't Know	--	--	1	2	--	--	1
No	Yes	9	11	21	24	5	6	1
	No	4	3	12	2	--	--	--
	Don't Know	6	6	5	4	--	--	3
Don't Know	Yes	--	1	1	2	--	--	--
	No	--	--	--	1	--	--	--
	Don't Know	--	--	--	--	--	--	--

C. RECOMMENDATIONS

Centreville should publicize the strengths of its vocational program more than it does at present. The respondents in the survey have suggested singling out for honors at school assemblies (not merely at dinners for students in cooperative work programs and their employers) outstanding students in the vocational-education program. They have further recommended the publication in the local newspaper of the names of competent graduates of the program and the establishment of a certification system whereby graduates could identify themselves to local employers.

Administrators of vocational education in local communities who wish to use the IVE Scale could modify the Likert section by replacing those items which are not especially relevant to vocational education in their high schools with different items. Appendix C of this report contains additional items believed to be useful for this purpose. In addition they could vary the number of sub-scales in the Semantic Differential section in accordance with the projected number of objects or phenomena to be rated. It is recommended that the investigator select aspects of vocational education in high schools that are definite and familiar to the respondents who will do the rating. The more specific and well-known the object of the investigation the more likely the Semantic Differential is to elicit satisfactory evaluative responses.

APPENDIX A

SELECTED REFERENCES

BLANK PAGE

Allport, G., The historical background of modern social psychology. In. G. Lindzey (Ed.) *Handbook of social psychology: I. theory and method*. Reading: Addison-Wesley, 1954.

Bousfield, W., The problem of meaning in verbal learning. In. C. Cofer (Ed.) *Verbal learning and verbal behavior*. New York: McGraw-Hill, 1961.

De Fleur, M. and Westie, F. (1963), Attitude as a scientific concept. *Soc. Forces*, 42, 17-31.

Edwards, A. (1957), *Techniques of attitude scale construction*. New York: Appleton-Century-Crofts.

Festinger, L., and Katz, D. (1953), *Research methods in the behavioral sciences*. New York: Holt, Rinehart and Winston.

Fishbein, M. and Raven, B. (1962), The A-B scales. *Hum. Relations*, 15, 35-44.

Green, B. F., Attitude measurement. In G. Lindzey (Ed.) *Handbook of social psychology: I. theory and method*. Reading: Addison-Wesley, 1954.

Guilford, J. P. (1956), *Fundamental statistics in psychology and education*. New York: McGraw-Hill.

Gurin, G., Veroff, J., and Feld, S. (1960), *Americans view their mental health*. New York: Basic Books.

Hansen, M., Hurwitz, W., and Madow, W. (1953), *Sample survey methods and theory*, Vol. II. New York: John Wiley and Sons.

Hays, W. L. (1963), *Statistics for psychologists*. New York: Holt, Rinehart and Winston.

Jenkins, J. J., Mediated associations: paradigms and association. In C. Cofer and B. Musgrave (Eds.) *Verbal behavior and learning*. New York: McGraw-Hill, 1963.

Katz, D., Cartwright, D., Eldersveld, S., and Lee, A. M. (Eds.) (1954), *Public opinion and propaganda*. New York: Holt, Rinehart and Winston.

Katz, D. and Stotland, E., A preliminary statement to a theory of attitude structure and change. In S. Koch (Ed.) *Psychology: a study of a science*, 3, 428-432, 1959.

MacLean, M. S. (1961), *The image of paper V: an inland anniversary study*. East Lansing: Michigan State University.

Mortimer, W. E. (1956), *Attitudes of educators and students in Utah toward manual labor and manual workers*. Unpublished D.Ed. thesis, University of Missouri.

Moser, C. A. (1958), *Survey methods in social investigation*. London: William Heinemann, Ltd.

Nosow, S., The vocational needs of Michigan and its local communities. In Michigan Education Evaluation Project, *Vocational education in Michigan: a final report*. College of Education, Michigan State University, 1963.

Osgood, C. E., Suci, F., and Tannenbaum, R. H. (1957), *The measurement of meaning*, Urbana, Ill., University of Illinois Press.

Osgood, C. E. Commentary on Professor Bousfield's paper. In C. Cofer (Ed.) *Verbal learning and verbal behavior*. New York: McGraw-Hill, 1961.

Rhine, R. (1958), A concept formation approach to attitude dynamics. *Psychol. Rev.*, 65, 362-370.

Rosenberg, M. (1960), A structural theory of attitude dynamics. *Publ. Opinion Quart.*, 24, 319-340.

Shaefer, C. J. (1962), *Pennsylvania's trade and industrial education image*. Department of Industrial Education, Pennsylvania State University, Univ. Park.

Smith, M. B., The personal setting of public opinions: a study of attitudes toward Russia. In D. Katz, et al. (Eds.) *Public opinion and propaganda*. New York: Holt, Rinehart and Winston, 1954.

Triandis, H. C. (1958), *Some cognitive factors affecting communication*. Unpublished doctoral dissertation, Cornell University.

Wenrich, R., Administration, organization, and supervision of vocational education. In Michigan Education Evaluation Project, *Vocational education in Michigan: a final report*. College of Education, Michigan State University, 1963.

Withey, S. (1960), *The public's picture of higher education in the state of Michigan: a third report*. Ann Arbor: Survey Research Center.

APPENDIX B

DATA-COLLECTING INSTRUMENTS

PERSONAL INTERVIEW SCHEDULE

University of Michigan
rtment of Vocational
ucation
1577

COVER SHEET

IMAGE OF VOCATIONAL EDUCATION

Mr.
Mrs.
rviewer: Miss ______________________________

of Respondent: M F (circle one)

Length of Interview ____________ (min.)

Interview Number	Address	Sample Source

Call Record

Call Number	1	2	3	4	More (Specify)
Hour of the Day AM					
PM					
Date					
Day of Week					
Results Interview (I) No Interview (NI)	I NI	I NI	I NI	I NI	

TERVIEWER: To be filled out for any address at which no interview is obtained.

CHECK ONE:

___ 1. No dwelling at this address. (Parents)
___ 2. No one at home; dwelling unit being lived in but no one at home after required number of calls. (Parents)
___ 3. Respondent absent; someone at dwelling unit, but respondent absent at each required call back. (Parents)
___ 4. No longer with the Union School District. (Professional staff only)
___ 5. Company no longer in existence. (Employers only)
___ 6. Refusal. Give description below.
___ 7. No interview obtained for reason other than above. Explain fully below.

NTERVIEWER: Space for Comments

Listing Sheet

Sampling Instructions for the Interviewer

(Note: Be sure to check the Handbook for definitions of married, family, and head of family.)

You are to list below all the members of this family who are age 18 or more. You should begin on line 1 with the head of the family, entering for that person the appropriate sex and age. On the lines following indicate the role, sex, and age of the spouse (when applicable), and then other adults in this family. Now consult the bottom of this sheet. The red check in one of the boxes indicates your respondent. If the box following "head of the family" is checked, then interview the head and only the head (make no substitutions). If the other box is checked, then interview the head's wife. Put a check mark on the correct line in the Respondent Chosen column.

Relationship to the Head of Family	Sex	Age	Respondent Chosen
1. Head of Family			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Note: If the head of family is not married, interview the head regardless which box is checked.

Interview:

Head of Family	☐
Other (Wife)	☐

DEPARTMENT OF VOCATIONAL EDUCATION
School of Education
THE UNIVERSITY OF MICHIGAN
Ann Arbor, Michigan

THE IMAGE OF VOCATIONAL EDUCATION
AMONG HOUSEHOLDS

This is a study that concerns the public high schools in the Union School District of Jackson. What you think about the training for employment-bound youth in Jackson interests us. You may be well acquainted with the program, or somewhat removed from it. It doesn't matter. What interests us most is how you feel about it, and this interview concerns your feelings about training in the public schools for employment and advancement in an occupation.

DEPARTMENT OF VOCATIONAL EDUCATION
School of Education
THE UNIVERSITY OF MICHIGAN
Ann Arbor, Michigan

SURVEY: HOUSEHOLDS

October 10, 1963

(All instructions to interviewers are in parentheses and are not to be read. In her introductory remarks, the interviewer does the following: introduces herself; asks about the DVE letter; shows her letter of identification; mentions that the DVE selected her to make the interview, and that only chance governed the selection of the respondent from the list of eligible people; and that the DVE considers all information gathered in interviews as confidential.)

1. About how long have you been living in the Jackson area?

_____ (under one year)
_____ (1 year, but less than 2)
_____ (2-4 years)
_____ (5-9 years)
_____ (10-19 years)
_____ (20 years or more)

2. In general, how do you feel about the educational program of the Union School District? Would you say that it is much above average for a community of this size, somewhat above average, about average, somewhat below average, or much below average?

_____ much above average
_____ somewhat above average
_____ about average
_____ somewhat below average
_____ much below average
_____ (don't know)

3. Do you feel that the youth of today who seek work are any different from the youth of say thirty years ago, who sought employment?

_____ (yes) _____ (no) _____ (don't know)

3a. (If yes, ask) In what ways?

____

____

____

. The phrase, vocational education, has a wide variety of meanings for different people. What does it mean to you when I use that phrase in a sentence such as, "That high school student is taking vocational education in school."? (Record as accurately as possible whatever respondent says.)

____

____

(Say) Anything else? ____

____

____

____

____

____

6. There appears to be no definition that everyone will agree to. For the purposes of this study vocational education will mean the following: public school instruction that develops the basic skills, judgment, and job-related knowledge, sufficient to prepare youth for full-time employment in business, agriculture, trade, industry, and other occupational areas.

Do you know of anyone who is taking (has taken) such a course in vocational education in high school?

_____ (yes) _____ (no) _____ (uncertain)

6a. (If yes or uncertain, ask) Do you recall the name of the course?

_____ (yes) _____ (no) _____ (decline)

6b. (If yes, ask) What is it?

____

____

9. Do you believe that there is an unemployment problem among recent high school graduates here in Jackson?

_____ (yes) _____ (no) _____ (don't know)

9a. There are estimates as to how many young persons under 21 will be available for employment ten (10) years from now. Do you think that there will be a lot more, quite a few more, just a few more, about the same as now, fewer, or what?

_____ a lot more   _____ quite a few more

_____ just a few more   _____ about the same as now

_____ fewer   _____ (other: _______________)

9b. What is your impression as to the kind of job opportunities that will be available to high school graduates in Jackson ten years from now - will they be any different from those currently available?

_____ (yes)   _____ (no)   _____ (don't know)

9c. (If yes, ask) In what way do you suspect they may be different?

____

____

____

3. Are you satisfied that the local high schools are doing all they can with present funds for youth not going on to four-year colleges?

_____ (yes)   _____ (no)   _____ (don't know)

13a. Are educational opportunities at the high school level comparable for students in vocational programs and for students in college preparatory programs?

_____ (yes) _____ (no) _____ (don't know) _____ (decline)

13b. (If no, ask) What reasons do you have for believing this?

____

____

____

____

13c. Do you think it would be a good idea for a girl or boy, who is average or a little brighter and interested in the area, to go into vocational education?

_____ (yes) _____ (no) _____ (don't know)

13d. (If yes or no, ask) What are some reasons for this?

____

____

____

18. If many young people were to go into vocational education it would cost more money for teachers' salaries and equipment. Do you feel local and state taxes should raise this additional money or should Federal tax money meet the need?

_____ local and state taxes _____ (all three)

_____ Federal taxes _____ (decline)

_____ (none of these) _____ (don't know)

18a. What advantages do you perceive in this?

____

____

____

20. Would you like to see here in Jackson a high school intended especially for vocational education students, if there were enough students to make such an arrangement economically sound and school officials were to use present buildings?

_____ (yes) _____ (no) _____ (don't know) _____ (decline)

20a. Please tell me why you feel this way.

____

____

____

22. Now I should like to ask you some questions about vocational education and how it pertains to your family. I know that, because of the way they drew this sample, at least one member of this household is in the eleventh grade at the high school level.

What is this child's sex?

M F (Circle one.)

22a. And [his / her] age?

15 15½ 16 16½ 17 17½ other _____ (Circle one.)

22b. Are there any other children in this household in the eleventh grade?

_____ (yes) _____ (no) _____ (don't know)

(If no, go to Q 29)

22c. (If yes, ask) What is the sex and age of each additional eleventh grader?

(c) sex: M F (d) age: 15 15½ 16 16½ 17 17½
other _____

(e) sex: M F (f) age: 15 15½ 16 16½ 17 17½
other _____

29. Is (are) your eleventh-grader(s) planning to continue school full-time after graduation from high school?

_____ (yes) _____ (no) _____ (don't know) _____ (depends on which one)

29a. (If no or depends on which one, ask) Is (are) your eleventh-grader(s) planning to work full-time immediately after leaving high school?

_____ (yes) _____ (no) _____ (don't know)

31. Does (do) your eleventh-grader(s) appear somewhat dissatisfied with [his / her / their] program(s) this year?

_____ (yes) _____ (no) _____ (don't know) _____ (depends on which one)

31a. (If yes or depends on which one, ask) In what ways?

____

____

____

31b. (If not mentioned, ask) Was there any difficulty about deciding which program to elect this year?

_____ (yes) _____ (don't know)

_____ (no) _____ (not applicable)

31c. (If yes, ask) What do you believe were the causes of this difficulty?

_____ (not applicable)

____

____

____

35. Some families hope their members will follow a certain occupation or career in life. Has your family had such an expectation for your eleventh grader(s)?

__(yes) __(no) __(don't know) __(depends on which one) __(decline)

35a. In recent months have you talked with your eleventh-grader(s) about choosing an occupation or career?

_____ (yes) _____ (no) _____ (depends on which one)

_____ (don't know) _____ (decline)

35b. (If yes or depends on which one, ask) How definite did your eleventh grader's plans seem to be - very definite, quite definite, general, quite indefinite, very indefinite ?

_____ very definite _____ quite indefinite

_____ quite definite _____ very indefinite

_____ general _____ (not applicable)

(If respondent knew of no expectation go to Q 35e)

35c. Did these plans differ from the family expectation to any noticeable extent?

____ (yes) ____ (don't know)

____ (no) ____ (not applicable)

35d. (If yes, ask) How did they differ?

____

____

____

35e. Has (have) your eleventh-grader(s) had any part-time jobs related to [his her their] vocational plans?

____ (yes) ____ (don't know)

____ (no) ____ (depends on which one)

35f. In addition to giving advice or providing financial support will your family be able to help your eleventh grader(s) secure full-time employment in an occupation?

____ (yes) ____ (no) ____ (don't know) ____ (decline)

42. Many high school students need helpful advice about their careers. Has (have) your eleventh-grader(s) received any such advice outside the home?

____ (yes) ____ (no) ____ (don't know) ____ (decline)

42a. (If yes, ask) Where did [he she they] get this help. (Check most important source.)

____ (at school) ____ (at community facility)

____ (at church) ____ (don't know)

____ (at work) ____ (decline)

____ (at community agencies)

3

42b. Who gave [him her them] the help? (Check most important source.)

____ (counselors)

____ (teachers)

____ (administrators)

____ (clergymen)

____ (other students)

____ (don't know)

45. Do you believe that a student's companions influence his or her decision about taking a program like vocational education more than the family does?

____ (yes) ____ (no) ____ (don't know)

45a. (If yes, ask) What do you suspect might be some reasons for this?

____

____

____

47. In terms of vocational goals how helpful would you consider the courses of study your eleventh-grader(s) take(s) - quite helpful, somewhat helpful, neither helpful nor unhelpful, somewhat unhelpful, quite unhelpful?

____ quite helpful

____ somewhat helpful

____ neither helpful nor unhelpful

____ somewhat unhelpful

____ quite unhelpful

____ (don't know)

____ (depends on each one) Explain: ____________________

____

____

48. What percent of the high school population in Jackson do you estimate is in a program oriented to college?

____ (don't know) ____ (decline) ____ (insert percentage)

48a. Do you feel that percentage is about right for this community?

____ (yes) ____ (no) ____ (don't know) ____ (decline)

50. Do you believe that for the remaining students the high school should offer vocational education programs?

____ (yes) ____ (no) ____ (don't know) ____ (decline)

50a. (If yes, ask) What kinds of programs would you like to see?

____

____

____

That completes all the questions about opinions. Now in order to understand why different people feel as they do, it helps me to know some additional facts.

52. Are you the head of this household?

____ (yes) ____ (no)

(If no, go to Q 58)

52a. (If yes, ask) What is your occupation? That is, what kind of work do you do?

______________________________ ____ (decline)

52b. What kind of business is that in?

______________________________ ____ (decline)

52c. Do you work for yourself or someone else?

____ self ____ someone else ____ (decline)

52d. Is this a full-time or a part-time job?

____ full-time ____ part-time ____ (decline)

52e. If you had a chance to do it all over again, what occupation would you like to be in?

____ (same as present occupation) ____ (decline)

____ (other; specify ______________________________)

____ (don't know)

(If respondent is not head of household, ask)

58. What kind of work does (head of household) do?

________________________________ ____ (decline)

58a. What kind of business is that in?

________________________________ ____ (decline)

58b. Does [he / she] work for [himself / herself] or someone else?

____ self ____ someone else ____ (don't know)

____ (decline)

61. About how long has (head of household) been in this occupation?

____ (0-6 months)

____ (7-11 months)

____ (1-3 years)

____ (4-6 years)

____ (6 years, 1 day or more)

____ (don't know)

62. Have you had personal experience with vocational education in any way?

____ (yes) ____ (no) ____ (don't know)

63. How many grades in school did you finish?

0 1 2 3 4 5 6 7 8 9 10 11 12 (Circle response.)

63a. Have you had any other schooling?

____ (yes) ____ (no)

63b. (If yes, ask) What schooling was that?

____ (junior college)

____ (private business school)

____ (some college)

____ (completed college, BA, BS degree)

____ (Master's degree)

____ (Doctor's degree)

____ (private technical school)

____ (correspondence school)

____ (decline)

66. From this sheet (hand respondent the sheet) please tell me approximately your total family income before taxes in 1962. Is it A, B, C, D, E, F, or G?

A.___ under $3,000
B.___ $3,000 - $4,999
C.___ $5,000 - $6,999
D.___ $7,000 - $9,999
E.___ $10,000 - $14,999
F.___ $15,000 - $19,999
G.___ $20,000 and above
___ (decline)

67. From that same sheet please tell me your approximate age. Is it A, B, C, D, E, F, G, or H?

A.___ 25-29
B.___ 30-34
C.___ 35-39
D.___ 40-44
E.___ 45-49
F.___ 50-54
G.___ 55-59
H.___ 60 or older
___ (decline)

68. About how many of the people you think of as friends, neighbors, people you talk to often at work, and so forth would you say were people who had some personal experience with vocational education - almost all, more than half, less than half, or very few?

____ almost all ____ more than half ____ less than half ____ few or none

69. We have covered a lot of matters that have to do with vocational education and what you think about it, especially as it affects your children. Are there any other things about vocational education, that you think of, that we have not asked about?

_____ (yes) _____ (no) _____ (don't know)

69a. (If yes, ask) What things do you think of?

____

____

____

71. (Observer notes) (Race: ___ Caucasian ___ Negro ___ other ______________)

Thank you very much. It has been extremely interesting talking to you. We very much appreciate your help. What is your name please?

____

(You may now answer questions about the survey or the uses of the data. If respondent has additional comments, use the back of this sheet.)
(Additional comments: . . .)

(Be sure to complete cover sheet, and to mark both questionnaire and cover sheet with interview number.)

(After you finish the interview, say the following:)

Please tell me any words or phrases you can think of that describe vocational education. For example, if you were describing a car you might say powerful or fast, rides comfortably or has lots of room. Just say anything that comes to mind when describing vocational education. (Use the "smile and nod" technique here. List any words the respondent utters. At the end of exactly two minutes thank the respondent.)

Responses: ______________________________

____

____

____

____

Additional Instructions to Interviewers

Several interviewers felt that the last (extra) page was too similar to one of the questions on the questionnaire. This letter contains a possible solution for you. You should be the judge as to which technique gives you better results: the technique outlined below or the last (extra) page as attached to the questionnaire. Feel free to use either technique.

A. The New Procedure

If someone were to say to you the word needle and ask you to say all the words you can think of that can go with needle, you might possibly reply:

(probe) needle - (you reply) thread, sewing, sharp, pointed, thimble, buttons, scissors, etc.
(probe) baseball - (a man's reply) bat, ball, glove, TV, base, etc.

B. Administering the New Procedure (your instructions are in parentheses)

"Our researcher needs some words for a rating scale he is making. Your help could prove valuable. I'd like to try a simple, brief experiment with you. Here's an example. What words can you think of that go with needle? (For men use baseball.) (When the respondent seems to have the idea, then say:) That's the idea. Now try this one:

"What words can you think of that go with vocational education? (Repeat) Vocational education. (After two minutes, thank the respondent.)"

Write the replies in the space provided on the last (extra) page with note New Tech.

Thank you.

THE IVE SCALE

SURVEY IMPORTANT SURVEY IMPORTANT SURVEY IMPORTANT SURVEY

THE UNIVERSITY OF MICHIGAN
Cooperative Research Project 1577
1020 South University
Ann Arbor, Michigan

ATTITUDES TOWARD HIGH SCHOOL EDUCATION

DEFINITIONS FOR THE PURPOSE OF THIS SURVEY:
Vocational education in high school means public school instruction that develops the basic skill, judgment, and job-related knowledge, sufficient to prepare youth for full-time employment in business, agriculture, trade, industry, and other occupational areas.

A college-preparatory program in high school is that sequence of courses which prepares a student either to enter a college of his choice, or to meet the general requirements of most colleges or universities.

SURVEY IMPORTANT SURVEY IMPORTANT SURVEY IMPORTANT SURVEY

Number ________

ATTITUDES TOWARD VOCATIONAL EDUCATION IN HIGH SCHOOL

DIRECTIONS: You are to cross out the response which corresponds most closely to your feelings about each item on this page and the next.

Example: Some high-school students are too undisciplined to employ. SA A U [✓ D] SD

SA= Strongly Agree U= Uncertain or Don't Know D= Disagree
A= Agree SD= Strongly Disagree

This person disagrees with the item to some extent and has indicated this by a mark (X) through D (Disagree).

Do not spend too much time on any particular item. There are no right or wrong answers. Merely cross out the abbreviation which most nearly indicates your true feeling. When your feeling falls between two choices, select the closer one. Do what you can and please answer every item.

N.B.: The number on this form is to help this office in its record keeping. This office will combine all results into statistical tables. Individual replies are confidential.

BEGIN HERE: Cross out one

1. It is more important to provide many students with a sound basic education than to use the time for vocational education. SA A U D SD

2. A high-school graduate of a vocational-education program impresses me a great deal. SA A U D SD

3. Those high-school students who would want to take vocational education are not mature enough to profit from it. SA A U D SD

4. High schools should encourage bright students to enter a vocational-education program. SA A U D SD

5. Vocational education does not make enough students useful members of society to justify its cost. SA A U D SD

6. I would favor expanding vocational-education programs even if available funds remain the same. SA A U D SD

7. Most vocational-education courses in my opinion lead nowhere. SA A U D SD

8. In my opinion there are not enough students in vocational education at the high-school level. SA A U D SD

9. I should like to see the values of vocational education made known to more parents than is now the case. SA A U D SD

Cross out one

10. I am opposed to expanding vocational-education programs in high school when so many students need the basic subjects. SA A U D SD

11. For many students in high school there should be greater emphasis on earning a living through a vocational-education program. SA A U D SD

12. Vocational-education programs cannot possibly prepare high-school students for the range of job opportunities available to them. SA A U D SD

13. In my opinion taking vocational education hinders students from further education after high school. SA A U D SD

14. I do not think vocational education in high school is as necessary for most students as are other worthwhile programs. SA A U D SD

15. In my opinion a graduate of a high-school vocational-education program is generally suited only for unskilled work. SA A U D SD

16. There should be more money set aside in the school budget for vocational education. SA A U D SD

17. Most students who take vocational education in high school in my opinion lack too many other scholastic skills. SA A U D SD

18. I should like to see vocational education encouraged more among high-school students. SA A U D SD

19. In my opinion vocational education in the high school is highly overrated. SA A U D SD

20. I believe good vocational-education programs in public schools attract new industries to a community. SA A U D SD

21. It seems to me that vocational education in high school does not prepare a student for advancement in an occupation. SA A U D SD

22. A more considerable portion of the high-school curriculum than at present should be devoted to vocational education. SA A U D SD

23. I am of the opinion that vocational education is too costly in proportion to its worth to the community. SA A U D SD

24. In my opinion most public schools do not provide vocational-education programs early enough. SA A U D SD

25. I would cooperate with others in order to develop the best vocational-education program for this community. SA A U D SD

26. I favor reducing vocational-education programs when available school funds are in short supply. SA A U D SD

27. This community should provide a wide variety of vocational programs to fit the abilities of most students not going to college. SA A U D SD

28. I am thoroughly sold on offering vocational education in high school. SA A U D SD

Directions

examples: Think about Vocational Education in High School

	very	quite	some-what	neither or both	some-what	quite	very	
useful		X						useless

You should ask yourself, "Does the phrase, Vocational Education in High School, mean to me something useful or useless?" You decide and mark the scale in the space closest to your feeling. The mark X here indicates that the phrase, Vocational Education in High School, means something quite useful. Again

Think about College-preparatory Education in High School

	very	quite	some-what	neither or both	some-what	quite	very	
disadvantageous					X			advantageous

Here the X describes College-preparatory Education in High School as somewhat advantageous.

On the next two pages first read the phrase at the top, then glance down at each pair of words. Put an X in the space under the word that best describes your true feeling for the pair. Move to the next set and do the same. Please answer every item.

Number________

Think about College-preparatory Education in the (Jackson) High School(s)

	very	quite	somewhat	neither or both	somewhat	quite	very	
desirable								undesirable
unrealistic								realistic
worthy								unworthy
unessential								essential
indefinite								definite
successful								unsuccessful
effective								ineffective
unattractive								attractive
boring								interesting
important								unimportant
profitable								unprofitable
satisfactory								unsatisfactory
harmful								helpful
worthless								valuable
rewarding								unrewarding
purposeful								aimless
insecure (future)								secure (future)
impractical								practical
respectable								disreputable
meaningful								meaningless

Please mark with an X one of the following:
I should describe my attitude towards vocational education in high school as:

	very	quite	somewhat	neither or both	somewhat	quite	very	
favorable								unfavorable

Number ____________

Think about Vocational Education in the (Jackson) High School(s)

	very	quite	somewhat	neither or both	somewhat	quite	very	
worthy								unworthy
unsuccessful								successful
interesting								boring
satisfactory								unsatisfactory
unrewarding								rewarding
impractical								practical
desirable								undesirable
unessential								essential
effective								ineffective
important								unimportant
harmful								helpful
worthless								valuable
meaningful								meaningless
unrealistic								realistic
definite								indefinite
attractive								unattractive
profitable								unprofitable
aimless								purposeful
insecure (future)								secure (future)
disreputable								respectable

	Yes	No
I gave an interview in the Fall.	____	____

Signed ____

IMPORTANT SURVEY IMPORTANT

Cooperative Research Project 1577
The University of Michigan
Ann Arbor, Michigan

B

EXPERIMENTAL REVISION OF THE IVE

Printing

Automotives

Electricity

Machine Shop

Clerical Office Work

Metal Fabrication

Stenography

Retailing

Drafting

Vocational Education in High School

July 10, 1964
School of Education

IMPORTANT SURVEY IMPORTANT

Number ____________

VOCATIONAL EDUCATION IN HIGH SCHOOL

DIRECTIONS: You are to cross out the response which corresponds most closely to your feelings about each item on this page and the next.

Example:

Vocational education is a snap program for too many students. SA A U [✓ D] SD

SA = Strongly Agree U = Uncertain or Don't Know D = Disagree
A = Agree SD = Strongly Disagree

This person disagrees with the item to some extent and has indicated this by a mark (X) through D (Disagree).

Do not spend too much time on any particular item. There are no right or wrong answers. Merely cross out the abbreviation which most nearly indicates your true feeling. When your feeling falls between two choices, select the closer one. Do what you can and please answer every item.

N.B.: The number on this form is to help this office in its record keeping. This office will combine all results into statistical tables. Individual replies are confidential.

BEGIN HERE: Cross out one

1. I believe good vocational-education programs in public schools attract new industries to a community. SA A U D SD

2. A high-school graduate of a vocational-education program impresses me a great deal. SA A U D SD

3. In my opinion there are not enough students in vocational education at the high-school level. SA A U D SD

4. Students should begin vocational programs after they graduate from high school, not before. SA A U D SD

5. As I see it high-school vocational education does not have as good a reputation as other programs do. SA A U D SD

6. Most students who take vocational education in high school in my opinion lack too many other scholastic skills. SA A U D SD

7. In my opinion vocational education in the high school is highly overrated. SA A U D SD

8. I would favor expanding vocational-education programs even if available funds remain the same. SA A U D SD

9. In my opinion many people oppose an increase in vocational-programs as the high school currently administers them. SA A U D SD

10. In my opinion a graduate of a high-school vocational-education program is generally suited only for unskilled work. SA A U D SD

11. Most vocational-education programs offered nowadays in high school are hopelessly out-of-date. SA A U D SD

Cross out one

12. A more considerable portion of the high-school curriculum than at present should be devoted to vocational education. SA A U D SD

13. High schools should encourage bright students to enter a vocational-education program. SA A U D SD

14. For many students in high school there should be greater emphasis on earning a living through a vocational-education program. SA A U D SD

15. Vocational education in high school does not make enough students useful members of society to justify its cost. SA A U D SD

16. I believe that the function of a high school is to develop saleable skills in all its students. SA A U D SD

17. This community should provide a wide variety of vocational programs to fit the abilities of most students not going to college. SA A U D SD

18. In my opinion taking vocational education hinders students from further education after high school. SA A U D SD

19. Vocational-education programs cannot possibly prepare high-school students for the range of job opportunities available to them. SA A U D SD

20. In my opinion most public schools do not provide vocational-education programs early enough. SA A U D SD

21. I am thoroughly sold on offering vocational education in high school. SA A U D SD

22. I do not think vocational education in high school is as necessary for most students as are other worthwhile programs. SA A U D SD

23. Free vocational education after high school should be available to students currently enrolled in high-school vocational programs. SA A U D SD

24. There should be more money set aside in the school budget for vocational education. SA A U D SD

25. I should like to see the values of vocational education made known to more parents than is now the case. SA A U D SD

26. It is more important to provide many students with a sound basic education than to use the time for vocational education. SA A U D SD

27. I favor reducing vocational-education programs when available school funds are in short supply. SA A U D SD

28. I should like to see vocational education encouraged more among high-school students. SA A U D SD

29. The vocational-education programs in high school should be intended mainly for youth of limited academic talent. SA A U D SD

30. Most vocational-education courses in my opinion lead nowhere. SA A U D SD

Part II

The following page in this booklet contains a slightly different procedure. We should like to determine how you feel about vocational education in high school in terms of specific words.

Imagine that some parents, employers, or teachers in Pontiac were to answer the following:

Think about ___The General Curriculum (Pontiac High Schools)___

Is it — or is it — or

very quite somewhat — very quite somewhat — Neither or both

_____:_____:_______ good, _____:_____:_______ bad, _______?

One person might feel that The General Curriculum in the Pontiac High Schools is somewhat good. He would mark his answer thus:

very quite somewhat — very quite somewhat — Neither or both

_____:_____:___X___ good, _____:_____:_______ bad, _______?

Another person might feel that it was quite bad. She would place her mark on this blank:

very quite somewhat — very quite somewhat — Neither or both

_____:_____:_______ good, _____:__X__:_______ bad, _______?

Still another person might have no definite feeling about The General Curriculum. He would place an X under (Neither or both).

very quite somewhat — very quite somewhat — Neither or both

_____:_____:_______ good, _____:_____:_______ bad, ___X___?

Before you begin the next part,

How sure are you that the questions asked on the previous pages are giving an accurate description of your attitude?

_______not sure _______fairly sure _______very sure

How concerned are you personally about the topic of vocational education in high school?

_______ concerns me little personally _______ concerns me a great deal personally

_______ concerns me somewhat personally _______ haven't thought much about it

Now turn to the next page.

(Mark one blank only per line)

Think about The Business Education Curriculum

Is it				or is it				or
very	quite	somewhat		very	quite	somewhat		Neither or both
______:	______:	______	essential,	______:	______:	______	unessential,	______?
______:	______:	______	sufficient,	______:	______:	______	insufficient,	______?
______:	______:	______	meaningful,	______:	______:	______	meaningless,	______?
______:	______:	______	emphasized,	______:	______:	______	neglected,	______?
______:	______:	______	unattractive,	______:	______:	______	attractive,	______?
______:	______:	______	rewarding,	______:	______:	______	unrewarding,	______?
______:	______:	______	ineffective,	______:	______:	______	effective,	______?
______:	______:	______	easy,	______:	______:	______	difficult,	______?
______:	______:	______	practical,	______:	______:	______	impractical,	______?
______:	______:	______	helpful,	______:	______:	______	harmful,	______?

Think about The Trade and Industrial Curriculum

Is it				or is it				or
very	quite	somewhat		very	quite	somewhat		Neither or both
______:	______:	______	emphasized,	______:	______:	______	neglected,	______?
______:	______:	______	meaningless,	______:	______:	______	meaningful,	______?
______:	______:	______	essential,	______:	______:	______	unessential,	______?
______:	______:	______	helpful,	______:	______:	______	harmful,	______?
______:	______:	______	unrewarding,	______:	______:	______	rewarding,	______?
______:	______:	______	effective,	______:	______:	______	ineffective,	______?
______:	______:	______	attractive,	______:	______:	______	unattractive,	______?
______:	______:	______	insufficient,	______:	______:	______	sufficient,	______?
______:	______:	______	difficult,	______:	______:	______	easy,	______?
______:	______:	______	practical,	______:	______:	______	impractical,	______?

Sex: M F Age: (30 or under)__,(31-40)__,(41-50)__,(51-64)__,(65 or over)____
Last grade in school completed______________ Other education______________
Do you personally know any student who is in a vocational-education program?
(Check one) Yes_____ No_____ Uncertain________
(If yes, or uncertain) what is the name of a vocational course he/she is taking?
(Name of Course)______________________________ Don't Know__________

APPENDIX C

MATERIALS RELATED TO THE IVE SCALE

ADDITIONAL ITEMS RATED FOR RELEVANCE BY A SELECTED GROUP OF PROFESSIONALS IN VOCATIONAL EDUCATION

		F - UF*	Median Score
1.	In my opinion vocational education in high school is poor preparation for more advanced technical training later.	UF	5.94
2.	Even a high school graduate in vocational education will have trouble getting a job nowadays.	UF	5.75
3.	Vocational education is a snap course for too many students.	UF	5.75
4.	Students should begin vocational education programs after they graduate from high school, not before.	UF	6.00
5.	I believe that a student who has taken vocational education in high school will not have difficulty finding employment.	F	6.44
6.	I feel employers should emphasize preparation through vocational education when interviewing job applicants.	F	6.43
7.	It should be an important function of the high school to place its vocational education graduates in jobs.	F	6.14
8.	The vocational education program in high school is intended for youth of limited academic talent.	UF	5.85
9.	I believe that the number of new occupations resulting from technology will increase the need for vocational education in high school.	F	6.82
10.	It is my belief that vocational education is an important factor in the economic growth of this community.	F	6.62
11.	I think most high-school graduates not going to college face a discouraging future without vocational education.	F	6.22
12.	Vocational education appears to me to be as respectable as any other high school program.	F	6.18
13.	It appears to me that many parents are not doing enough to convince their children about the need for vocational education.	F	6.15
14.	I am confident that vocational education means more than putting someone to work with his hands.	F	6.06

*F = Favorable to Vocational Education.
UF = Unfavorable to Vocational Education.

ITEM ANALYSIS OF SD SCALE USED WITH CONCEPT: VOCATIONAL EDUCATION PROGRAM IN HIGH SCHOOL

Sub-Scale	N	Mean	Distribution of Item Responses						
			Very	Quite	Some-what	Neither or Both	Some what	Quite	Very
1	227	6.13	2	2	3	5	32	84	99
2	227	5.36	1	8	12	18	73	78	37
3	227	5.81	2	0	4	18	38	111	54
4	227	5.43	2	3	18	16	62	85	41
5	227	5.79	3	1	5	10	61	80	67
6	227	5.98	1	0	7	10	32	103	74
7	227	6.19	1	4	4	8	21	77	112
8	227	6.25	1	3	1	11	19	74	118
9	227	5.45	3	2	11	17	65	98	31
10	227	6.35	2	3	2	5	15	68	132
11	227	6.21	0	2	0	9	29	85	102
12	227	6.24	0	2	0	10	22	88	105
13	227	5.95	0	2	3	10	38	110	64
14	227	5.62	2	3	9	15	53	99	46
15	227	5.34	2	3	22	26	44	95	35
16	227	5.42	1	3	13	26	62	84	38
17	227	5.83	0	1	3	19	53	86	65
18	227	5.81	0	3	10	18	34	94	68
19	227	5.48	2	6	11	28	39	96	45
20	227	5.93	1	0	5	16	34	101	70

ITEM ANALYSIS OF SD SCALE USED WITH CONCEPT: COLLEGE PREPARATORY PROGRAM IN HIGH SCHOOL

Sub-Scale*	N	Mean	Distribution of Item Responses						
			Very	Quite	Somewhat	Neither or Both	Somewhat	Quite	Very
1	225	6.37	0	1	2	4	12	92	114
2	225	5.85	2	5	2	11	36	108	61
3	225	5.75	0	0	7	28	30	110	50
4	225	5.96	1	3	5	7	31	111	67
5	225	6.18	1	3	0	5	20	108	88
6	225	6.12	0	1	5	10	24	95	90
7	225	6.47	1	1	1	4	11	71	136
8	225	6.50	1	0	3	3	10	65	143
9	225	5.94	1	3	3	6	34	120	58
10	225	6.56	0	2	1	3	7	62	150
11	225	6.32	0	0	1	5	20	94	105
12	225	6.43	0	0	3	1	10	93	118
13	225	6.22	0	4	2	5	12	108	93
14	225	5.79	0	3	18	13	25	97	69
15	225	5.85	0	2	16	13	23	98	72
16	225	5.77	0	3	5	19	46	93	59
17	225	6.20	0	2	0	12	20	95	96
18	225	6.15	0	1	4	7	23	104	86
19	225	6.12	0	1	5	10	24	95	90
20	225	6.37	0	1	3	7	6	92	116

*To facilitate card punching and analysis, the sub-scale numbers in this table refer to those used in Figures 10-17, and not to the order used in the questionnaire for this concept.

POOL OF VERBAL UNITS FOR SD SCALES

Responses made to the requests "Please tell me any words in a phrase you can think of that describes vocational education," and "What words can you think of that go with vocational education?"

I. Synonymous

- preparatory
- preparation for life, earning a living
- job-training
- guide to one's best-suited occupation
- way of keeping a job
- training school
- earning a living
- self-explanatory
- exploring vocations

II. Opportunistic

- advantageous
- beneficial
- helpful
- opportunity to learn skills
- improvement
- advancement
- possibilities
- bettering
- beneficial
- betterment
- exposure to opportunity
- apprenticeship
- last resort
- better than dropping out
- life-saver
- useful

III. Descriptive

- manual
- not college-training
- functional
- non-academic
- shop
- skills
- trades
- technical
- detailed
- specific, general
- coordinating brain and muscle
- complete
- trade, training
- broad, narrow
- vague
- basic
- mechanical
- blue-collar
- cooperative
- do-it-yourself
- specialized
- obsolete techniques
- not advanced
- occupational
- needs study
- human relations
- awareness of job requirements
- factory
- individualized programs
- tangible goals
- ingenuity
- dexterity
- boys
- different classes
- competent instructors
- not professional

IV. Evaluative

- necessary
- important
- needed
- interesting
- essential
- not utilized to highest potential
- underdeveloped
- insufficient
- room for improvement
- not as effective as could be
- neglected, emphasized
- practical
- specific
- respectable
- meaningful
- realistic
- good, wonderful
- misunderstood
- desirable
- abreast of time
- needs improvement
- needs expansion
- needs emphasis
- stigma attached
- economically feasible
- potential saver of drop outs
- prevention of juvenile delinquency
- tangible goals
- stimulating a person's mind
- room for more
- stereotyped

V. Effective

- sense of achievement
- step right out and do
- hourly rate
- big salaries
- security
- money
- standard of living
- higher income
- salable skills
- personal satisfaction
- happiness
- human pride and dignity
- employment

VI. Personal Characteristic

- not college material
- practical ability
- failure
- average or below
- not so bright
- not beyond high school
- self-confidence
- assurance
- conscientious
- sincere
- potential drop out
- slow learner
- problem child
- underachiever
- willing
- self-reliant
- better-equipped
- mistreated
- skilled, unskilled, semi-skilled
- qualified, being equipped

APPENDIX D

STATISTICAL TABLES AND FORMULAS USED

A SUMMARY OF STATISTICS COMPUTED BY DESK CALCULATOR FROM SCORES ON THE LIKERT SCALE (HOUSEHOLDS AND EMPLOYERS)

	N	M	SD	est SE$_M$	T Ratio
Group 1	155	106.9	12.3	.99	2.05
Group 2	71	102.1*	6.0*	2.40	

*Weighted for stratification.

SUMMARY OF SAMPLE STATISTICS USING WEIGHTED VALUES FOR THE STRATA OF EMPLOYERS

	Mean	SD	Var.	SD (Finite Populations)	est SE$_M$	T Ratio
1. Households	106.9	12.3	152.2	12.4	.99	2.05 (1-2)
2. Employers	102.1	6.0	36.0	--	2.40	NS
N size						
15 (1 - 20)	102.3	11.3	126.6	11.9		NS
38 (21 - 100)	100.7	20.7	429.1	20.9		NS
18 (101 and above)	103.3	13.7	188.4	13.9		NS
3. School Teachers	108.9	10.3	108.5	10.4	1.74	NS
4. School Administrators	110.7	10.2				NS

STATISTICAL FORMULAS AND PROGRAMS USED IN ANALYZING DATA

A. Statistical Formulas

1. Sampling from Finite Populations:

$$\hat{s}^2 = \text{est. of } s^2 = \frac{N(T-1)}{(N-1)T} s^2$$ (Hays, 7.17.1, p. 210)

$$\text{est. } \sigma_M = \sqrt{\frac{(T-N)\hat{s}^2}{(T-1)N}}$$ (Hays, 7.17.3, p. 211)

2. Stratified, Single-Stage Sampling:

$$\bar{X} = \frac{\sum_{h}^{l} T_h \bar{X}_h}{T}$$ (Hansen, et al, 6.1, p. 121)

$$s = \sqrt{s_b^2 + s_w^2}$$ (Hansen, et al, 6.1, p. 129)

$$s_b^2 = \frac{\sum_{h}^{l} T_h(\bar{X}_h - \bar{X})^2}{T}$$ (Hansen, et al, 6.3, p. 130)

$$s_w^2 = \frac{\sum_{h}^{l} \sum_{i}^{N_h} (X_{hi} - \bar{X}_h)^2}{T}$$ (Hansen, et al. 6.4, p. 130)

$$\text{est. } \sigma_M = \sqrt{\frac{\sum T_i^2 \, s_i^2 / n_i}{T^2}}$$ (Moser, 6.4, p. 86)

3. Computation of T Ratio and F ratio

$$T = \frac{\bar{X}_a - \bar{X}_b}{\sqrt{\left[\frac{\sum(X_a - X_a)^2 + \sum(X_b - X_b)^2}{N_a + N_b - 2}\right]\left[\frac{1}{N_a} + \frac{1}{N_b}\right]}}$$

with $N_a + N_b - 2$ degrees of freedom

4. Power of a Statistical Test

$$Z = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

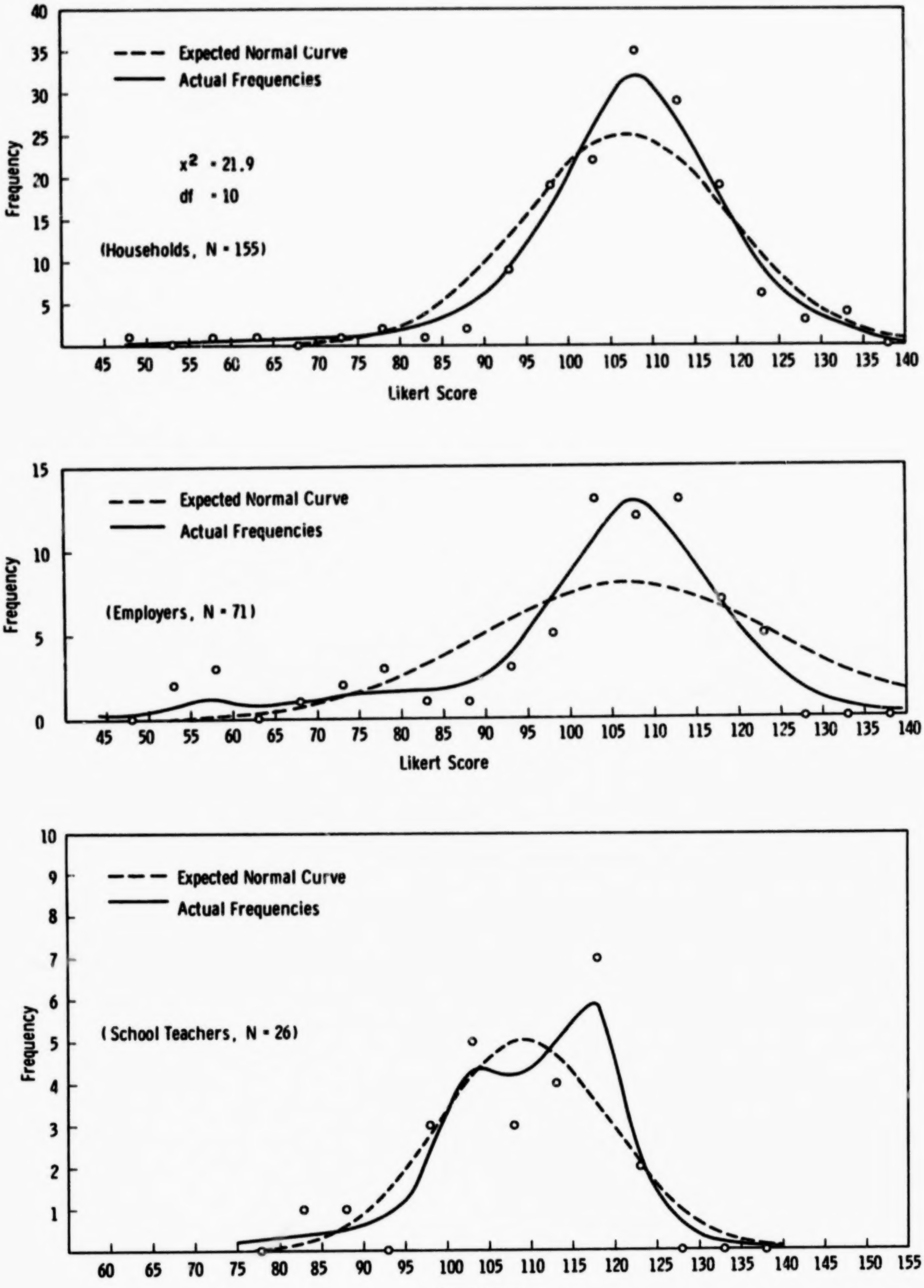
where X_1 and X_2 = means of first and second sample

S_1^2 and S_2^2 = variance of first and second sample

N_1 and N_2 = sizes of first and second sample

B. Programs

1. University of Michigan Principal Axis Factor Analysis and Varimax Rotation
2. Program to Analyze Rating Scales (Johnson, U of M)
3. Program to Compute T Ratio and F Ratio (Johnson, U of M)
4. Curve-Fitting Program (Johnson, U of M)



Expected and actual curves of frequency distribution.